

DEPARTMENT OF AGRICULTURE

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REPORT

OF THE

DAIRY AND COLD STORAGE COMMISSIONER

FOR THE

FISCAL YEAR ENDING MARCH 31

1913

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DAIRYING, FRUIT, EXTENSION OF MARKETS AND COLD STORAGE

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# REPORT

## OF THE

# DAIRY AND COLD STORAGE COMMISSIONER

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To the Honourable  
The Minister of Agriculture.

SIR,—I have the honour to submit my report for the year ended March 31, 1913. The report is presented under the four heads of Dairying, Fruit, Extension of Markets and Cold Storage, to correspond with the organization and work of the Branch.

### DAIRYING.

#### THE PROGRESS OF DAIRYING.

While no exact figures can be quoted with respect to the total quantity of milk produced in Canada from year to year, if the annual increase in the home consumption of milk, condensed milk, cream, ice cream, butter and cheese is taken into account, it is evident that there is a large yearly increase, after allowing for the decrease in the total exports and the increase in the imports of butter.

There has been a very noticeable increase in the attention given to dairy farming in some parts of the prairie provinces during the past year. The quantity of creamery butter produced in Alberta, Saskatchewan and Manitoba has been quadrupled within a few years, and in 1912 it amounted to about 6,000,000 pounds, or approximately one-fourth of the creamery butter marketed west of the Great Lakes, including what was imported at Vancouver from the Antipodes.

The season of 1912 witnessed a further diversion of milk from the cheese factories of Western Ontario to the milk condensories and milk powder factories and also to the city creameries and milk depots. The increasing demands of the city of Montreal for fresh milk is resulting in a diminished supply at the cheese factories and creameries in some of the districts near that city.

#### THE EXPORT TRADE.

Although there was an increase in the quantity of milk produced during the year, it was not sufficient to meet the constantly growing demand for milk and its products. Both the quantities and values of all products exported in 1912-13 were somewhat below the figures for 1911-12, as will be seen by a reference to the tables in Appendix VIII. The total export of butter in 1911-12 was 8,844,402 pounds, which was the largest quantity exported in any year since 1907. In 1912-13 the exports



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fell to 828,323 pounds, and of this amount only 681 pounds were sent to Great Britain. This is all the more notable in view of the fact that the exports of butter from Canada to Great Britain have not been less than one million pounds in any year since 1850.

The exports during the past year consisted chiefly of tinned butter from the Maritime Provinces to the West Indies, and some inferior dairy butter which went to the United States.

#### THE SHIPPING OF GREEN CHEESE.

The practice of shipping green, immature cheese still continues with many factories, and the writer believes that it is the most serious danger that threatens the export trade. It means that the consumer in Great Britain is being offered an article which does not suit his taste. It makes no difference what the cause is so long as he looks upon it as a defect, for the inevitable result is a reduced demand.

It has been proposed to prevent the shipping of green cheese by legislation, and it must be admitted that strong arguments can be made in favour of that method of controlling the matter. There would, however, be some difficulty in determining what would be a reasonable time to compel cheese factories to hold their cheese before shipment. Cheese vary greatly in the rate at which they ripen. The conditions under which the cheese are held as regards temperature, &c., have much to do with the age of the cheese in point of maturity. In any case, the fixing of a legal time limit before shipment would be an arbitrary act at best, as there is no practical or accurate basis to work from. The writer is of the opinion that it would be difficult to administer such a law fairly and without hardship in many cases. United action on the part of salesmen is not easy to secure, but that is all that is necessary to settle the matter effectually. The usual excuse or refuge of the salesman, when urged to put a stop to the shipping of green cheese, is to put the blame on the buyer. The buyer is certainly doing wrong in handling these green cheese and thus encouraging a practice which is detrimental to the trade, but as he is not likely to suffer to any extent for his part in the transaction, it seems to me that the responsibility rests upon the salesman as representing the people who will lose if the trade is seriously injured.

#### THE IMPORTATION OF BUTTER.

The imports of butter during the year under review amounted to 7,989,269 pounds, valued at \$2,081,989. Canada has imported more or less butter for over twenty years, but the quantity has been insignificant until the last year or two. Naturally, the importation of this large amount of butter has caused considerable comment, and many expressions of surprise have been heard that a great agricultural country like Canada should be obliged to procure supplies of dairy products from other countries. After all is said, it is a question of population in relation to productive areas. The United Kingdom of Great Britain and Ireland produces more milk than Canada does, being the second largest producer in the world, and yet the value of the butter and cheese annually imported into that country is practically double that of all other countries in the world combined.



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A very large proportion of the butter imported into Canada consists of direct shipments from New Zealand to Vancouver to supply the Pacific coast trade, although a considerable quantity of New Zealand butter was brought to Eastern Canada during the past year via London. New Zealand butter as it arrives in Canada is a freshly made grass article, and being carried from New Zealand to Vancouver at suitable refrigerating temperatures, it naturally arrives in good condition and makes a strong competitor with the Canadian stored butter. The duty is three cents a pound on the New Zealand butter under the preferential tariff, but the ocean freight on butter from New Zealand to Vancouver is rather less than the rail freight is from Montreal. The cost of carrying butter in cold storage from June and July, for consumption during the winter months, is practically equal to the duty. When all these points are considered, it is not so strange after all that Western Canada finds it advantageous to import butter from the Antipodes. Even though there should be a surplus above all Canadian requirements in Eastern Canada, the imports of butter into British Columbia will probably continue until the western provinces make a sufficient quantity, as I believe they eventually will, to supply their own markets.

## ATTEMPTS TO MANIPULATE NEW ZEALAND BUTTER.

Shortly after the New Zealand butter began to arrive in British Columbia in large quantities, it was reported to this office that certain firms in the city of Vancouver were rechurning it with a view of adding to its water content. Steps were at once taken to investigate the matter and an inspector was instructed to secure samples for analysis. It was found in several cases that the legal limit of 16 per cent of water was being very greatly exceeded. Several wholesale firms were convicted on a charge of selling butter containing more than the legal limit of water, and retailers were notified that they would be held responsible for butter of similar character passing through their hands. The law is now believed to be carefully observed, although a strict watch will be maintained for further violations. The law requires, although it is not a very important matter, that butter not produced in Canada shall bear evidence of the country of origin when offered for sale in this country. Some dealers have neglected to observe this requirement and attention has been called to it through the press and otherwise.

## THE HOME TRADE.

There is quite naturally a continued expansion of the home trade to correspond with the increase of population. The per capita consumption of milk, cream, ice cream and other products has also increased very largely during recent years. The value of the home consumption of dairy products increases something like \$3,000,000 every year.

## THE ICE CREAM TRADE.

Some figures relating to the ice cream trade were collected during the year. Returns were obtained from 60 ice cream manufacturers in 24 towns and cities. Of this number, all but 13 have been established since 1904, and they all report that their business is growing at the rate of 20 per cent to 25 per cent per year. The



quantity of cream used for ice cream by the manufacturers from whom returns were received is equivalent to about 2,000,000 pounds of butter and, of course, this does not take into account the large quantity used by the hundreds of smaller ice cream makers all over the country.

The successful factory of the future, in the more populous districts of the country will be located at a convenient shipping point, and must be fully equipped to manufacture cheese or butter, or to engage in the cream trade at a moment's notice at any season of the year. There is no reason why ice cream should not be manufactured in creameries instead of shipping the cream to the cities for that purpose.

#### MILK TRAINS.

In this connection, the following news paragraph from a Montreal paper of April 29, 1912, is reproduced to record an interesting event in the evolution of the trade in dairy products:—

‘The first special milk train in Canada arrived at the Bonaventure station this morning, bringing a large consignment of milk from the rich dairying district on the Fort Covington division. In order to cope with the ever growing needs, and as a response to a widespread appeal last summer by philanthropic bodies generally for an increased supply of milk for the babies of the city during the parching summer months, when the problem is one of life and death to the tiny citizens of the future, the Grand Trunk Railway has to-day inaugurated the first special milk train in Canada.’

#### THE FINCH DAIRY STATION.

The new building for this station was not ready for use until August 23, 1912, on which date the manufacturing of cheese was transferred from the two old factories to the new premises. The manufacture of butter was started on November 21, and has been continued all winter, although the supply of milk was rather small. It is expected that the high price obtained for the butter and the return of sweet pasteurized skimmilk will encourage the patrons in the production of winter milk. Owing to the lateness of the season when the new station was completed, no experimental work was undertaken in 1912.

#### THE BROME DAIRY STATION.

The new building at Brome was opened on December 13 last. The creamery will be operated the year round. The Brome Creamery is a very neat looking building, and when the grounds are trimmed and planted, as they will be in a few weeks' time, the whole place will have a very attractive appearance.

Illustrations of both the Finch and Brome stations and brief statements of the year's operations will be found in Appendix IV. The plans and specifications are being published in bulletin form. It is proposed to carry on some experimental work this year.

#### COW TESTING.

I am pleased to be able to say that the cow testing movement has shown increased activity during the past year. With your authority, eight new Dairy Record Centres were established, six in Ontario and two in the Province of Quebec. The old cow



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testing associations have been continued in a great many localities. A very marked feature of the work at the present time is the increasing number of requests received for the forms which are used in keeping the records of individual cows. These forms are supplied to any person who asks for them, and the number thus furnished during the past year was greatly in excess of any previous year. Many hundreds of farmers are now keeping records of their cows quite independent of any cow testing association or Dairy Record Centre, and every encouragement is being offered to the owners of herds to adopt that course. Seven or eight Record Centres have already been organized for the calendar year of 1913, and it is expected that one or two others will yet be started.

The keeping of the records of the cows tested, as carried out in this office, is assuming large proportions, and it is possible that some other plan may have to be devised to lessen the clerical work involved.

Arrangements were made a few months ago to transfer the cow testing in the Province of British Columbia to the Provincial Department of Agriculture, and the Live Stock Commissioner for that province now has the matter in hand.

## THE COOL CURING OF CHEESE.

Except in Western and Central Ontario, the cool curing of cheese, that is to say, the equipment of cheese factories with curing rooms in which the temperature can be controlled, has not made as much progress as the importance of this improvement would seem to warrant. This is partly due, no doubt, to the practice already referred to, of the cheese factories in the extreme eastern part of Ontario and in some parts of the Province of Quebec shipping their cheese in a very green condition. Another reason why cool curing rooms have not been provided at more factories is because of the low rates for manufacturing cheese. In a factory with a small output, the revenue is too small to permit the necessary expenditure being made to provide improvements of any kind. Patrons of factories would be well advised to agree to a higher price for manufacturing and then demand a better service in return. It is hoped that the operation of the new dairy stations will demonstrate that patrons can afford to pay a higher rate for manufacturing and still receive a better return for their milk. The rates at both stations have already been raised with the unanimous consent of the patrons.

The cost of labour, boxes, fuel and other supplies that are used in the manufacture of cheese and butter has increased very considerably during recent years, and there has not been a corresponding increase in the revenue to the manufacturer. The smallness of the revenue at many factories is a positive barrier to progress in the dairy industry.

## COMPLAINTS RE WEIGHTS OF CHEESE AND BUTTER.

Complaints as to excessive short weights of cheese and butter, especially of cheese, as reported to salesmen by the Montreal merchants, supported by the Public weigher's certificate, on shipments subject to Montreal inspection, have been common for years among the factories in Eastern Ontario and the Province of Quebec, where a large proportion of the cheese and butter is sold in the country, weights and quality guaranteed in Montreal.



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During the same period, and more particularly during the past two or three years, very serious complaints have come from exporters in Canada, and from merchants in the Old Country as to irregularities in the marked weights on Canadian cheese. Overmarkings of 5 to 10 pounds on one or more cheese in a shipment, indicating gross carelessness or worse, have been too common for the good of the trade. The public weigher at Montreal and the cargo inspectors in Great Britain were requested to report cases of serious over-markings to this office. These cases were quietly investigated, not with the expectation of securing much positive evidence as to how the cause of complaint originated, but rather to show that such inaccurate marking was sure to be discovered sooner or later and brought home to the responsible parties. I am informed that since this policy was adopted, there has been less complaint with regard to over-marking. The over-marking here referred to is not to be confused with 'short weights' resulting from shrinkage of the cheese, inaccurate scales, or too close weighing at the factory.

The short weight trouble as complained of by the factories has not grown less, but has, on the contrary, and very naturally, shown a tendency to become more acute since the cheese have been shipped in a greener condition.

A demand has arisen for the appointment of a government weigher, in the belief that the appointment of such an official would very largely eliminate the cause of complaint. Those who are familiar with the situation know that a mere change of weighers would leave the matter exactly where it stood before, because it would not go to the root of the trouble. I would like to add that I believe the charges of dishonesty which have been so freely made in this connection are wholly unwarranted. There has been no evidence produced to substantiate such statements which, made without foundation, do much harm by sowing the seeds of distrust where mutual confidence is desirable.

#### THE ROYAL COMMISSION ON CHEESE AND BUTTER WEIGHING.

A Royal Commission consisting of Mr. R. A. Pringle, K.C., Ottawa, Chairman, Mr. Arthur J. Hodgson, Cheese and Butter Merchant, Montreal, and Mr. Samuel J. Macdonell, Cheese Manufacturer, Strathmore, Ont., was appointed by an order in council dated July 9, 1912, to investigate the question of the weighing of cheese and butter. A further order in council of August 1 enlarged the scope of the Commission by giving it 'full power to inquire into the complaints made by representative dairymen as shown by documents on file in the Department of Agriculture as to present methods of payment for butter and cheese in Montreal.' The Commission has not yet submitted a report, but will do so very shortly, and the probabilities are that it may appear in print before these lines do. It would be out of place to make any comment here on the work of the Commission, but I may be permitted to say that the facts made public at the various sittings of the Commission would alone justify the appointment, even if no further action should be taken.

#### ENFORCEMENT OF THE FEDERAL DAIRY LAWS.

Apart from the prosecutions already mentioned for adding water to New Zealand butter by dealers in Vancouver, B.C., there are few serious violations of the law to



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be recorded. A produce dealer in Quebec was convicted and heavily fined for putting on the market a butter adulterated with foreign fats. Some other cases are now being dealt with.

The high price of butter during the past year or two has increased the incentive to violate the law in the admixture of cheaper fats with pure butter. The growth of the cities makes it easier to carry on any illegal process without detection, and the matter of regulating the manufacture and sale of dairy products is daily becoming more difficult. Some reorganization of and addition to the inspection service now seems to be necessary.

I propose as far as possible to utilize the services of the permanent fruit inspectors for this purpose, especially during their slack season, as was done with success in the Vancouver cases.

The changing conditions in the trade in dairy products in this country will make some revision of the dairy laws necessary in the near future in the interests of producers and consumers alike.

## THE FRUIT TRADE.

The work of this Branch in relation to the fruit growing industry during the past year included the administration of Part IX. of the Inspection and Sale Act, which covers the packing and marking of fruit and the sale thereof, the publication of a monthly fruit crop report from May to September, inclusive, educational work in the box packing of apples, and attendance of the experts at short courses and fruit institutes. The illness and consequent absence of the Chief of the Fruit Division during the greater part of the active fruit shipping season, was a distinct loss to the office, and made it necessary for the writer to give more of his personal attention to this Division than usual.

## FRUIT INSPECTION.

The fruit inspection service was completely reorganized at the beginning of the season of 1912-13. The country was divided into five districts with a chief inspector over each, and inspectors were assigned to definite territories within each district. For assignments of the inspectors see Appendix III.

The number of inspectors, temporary and permanent, was increased from 30 in 1911-12 to 48 in 1912-13, thus making it possible to cover the whole country more completely than in any past season.

Although the character of the season's crop tended towards violations of the law, the total number of convictions shows a decrease in proportion to the number of examinations made.

## THE FRUIT SEASON OF 1912-13.

The past season developed some features which made it rather an unsatisfactory one for the growers in British Columbia and in some parts of Ontario. The great increase in the crop of apples in the Northwestern States, together with a large increase in the crop in British Columbia, introduced new conditions which were not very satisfactorily met by the selling agencies on either side of the line. As a result



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of the inefficient organization, the markets became demoralized and a large quantity of fruit was sold at slaughter prices. The absence of the usual apple buyers was a factor in preventing many of the growers in some parts of Ontario from securing remunerative prices for their crops. The season's experience has, however, taught some useful lessons for fruit growers, and has proved very conclusively the value of and necessity for a thorough organization of the selling end of the business. The co-operative associations in Nova Scotia, through their central selling agency, had a successful season as a result of combination in the distribution of their crop.

While the season's operations did not turn out very well for some growers and dealers, it can be said, I think, that in the adoption of more scientific methods in the orchards, and in the attention given to attractive packing, decidedly forward steps have been taken and that the fruit trade is gradually developing into a more stable and reliable business.

#### SPECIAL EVIDENCE TAKEN BY THE COMMITTEE ON AGRICULTURE AND COLONIZATION.

Considerable interest was manifested in the special evidence taken by the Select Standing Committee of the House of Commons on Agriculture and Colonization with regard to the fruit trade. Representative fruit growers from Ontario, Nova Scotia and British Columbia were called to give evidence before the committee. The writer and chief traffic officer of the Railway Commission also gave evidence, the latter dealing specially with the question of freight rates, and submitting definite information on some points that had not been made clear to the committee by previous witnesses.

Mr. W. S. Foggo, the witness from British Columbia, argued for the adoption of more effective measures for the inspection of fruit imported into the prairie markets from the United States. He also presented to the committee, in a convincing manner, the serious nature of the competition which British Columbia growers had to meet in heavy shipments of fruit, on consignment, from the United States to the Canadian prairie markets.

The witness from Nova Scotia was Mr. S. B. Chute, President of the United Fruit Companies, the selling organization for the co-operative fruit growers societies in that province. Mr. Chute gave very interesting evidence as to the working of his society and the success which has attended its operation so far. He spoke hopefully as to the future of the apple trade in his province.

Mr. D. Johnson, President of the Ontario Fruit Growers' Association, who appeared before the committee as a representative of the fruit growers of Ontario, complained of unfair freight rates and a lack of refrigerator cars during the shipping season. Mr. Johnson expressed himself as strongly in favour of co-operation.

The printed evidence, which will be published by the House of Commons, should be interesting and instructive reading for fruit growers.

#### THE RETAIL PRICE OF FRUIT.

It was very noticeable during the past season that although the growers were complaining of low prices in many instances the cost to the consumer was well maintained, except occasionally and in places where there was a glut of tender fruit on



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the market. Apples of indifferent quality have been sold at retail, by count, for the same prices as oranges and in the same shops. It is highly important to the grower, especially in a year of heavy production, that the consumer should get the advantage of the lower price which the grower is compelled to accept to thus promote consumption and enlarge the market for the surplus fruit.

## THE EDUCATION OF THE CONSUMER.

A great deal might be done to increase the consumption of apples by educating the consumer respecting the qualities and seasons of the different varieties. The average consumer cannot be expected to identify very many varieties, or to know when they are at their best, or whether a particular variety is best adapted for dessert or cooking purposes. A little information imparted along these lines would, it seems to me, bring good results. It would cost very little to put a printed slip in each package stating the season when the variety which it contains should be at its best, and pointing out at the same time the use for which that variety is best adapted. We know by the records of the fruit inspectors that large quantities of late winter apples go forward to market in the early part of the season. If these apples are offered for sale at that time they cannot be expected to give good satisfaction. If consumers were better advised on these points, they would not be so likely to purchase apples that were out of condition on account of being kept too long, and dealers would be more careful to see that they were placed on the market at the proper time. There can be no question that a large increase in the consumption of apples could be effected in this way, and the fruit growers' organizations would do well, it seems to me, to consider plans for giving effect to some such form of advertising. This matter of advertising is one which is commanding much attention these days. The citrus fruit growers spend large sums for such purposes, and those who are interested in the banana trade are also fully alive to the importance of publicity. The consumption of the banana is growing more rapidly than that of any other fruit which competes with apples to-day.

## THE MARKETING OF GREEN IMMATURE FRUIT.

Another matter which deserves the attention of fruit growers as a whole is the increasing quantity of immature fruit which is every year being put on the markets both at home and abroad. Consumers are apt to attribute the unsatisfactory character of such fruit to inherent qualities rather than to the real cause, and being disappointed once are less inclined to purchase again. One basket of green, sour grapes, for instance, loses a customer for half a dozen later on, and the same is true of other fruits. Very green apples, other things being equal, do not keep as well as those of the same sort that are well matured. This applies particularly to the later and slow ripening varieties.

## APPLE PACKING DEMONSTRATIONS.

The packing of high grade apples in boxes instead of barrels is increasing among the growers in Eastern Canada. In British Columbia all the apples are packed in boxes. The demand for instruction in the box packing of apples has been



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met, in part at least, by employing an expert in this particular line of work, under the direction of this Branch.

Assistance was given in the training of packers for the co-operative societies, and classes were held in different parts of Ontario and in the Maritime Provinces.

#### THE FRUIT CROP REPORT.

An improvement was made in the Fruit Crop Report in 1912 by giving estimates and crop prospects on a percentage basis, 100 per cent representing an average or standard crop. The reporting of fruit crops in Canada at the present time is somewhat complicated by the rapidly increasing acreage of bearing trees that have to be taken into account every year. The Chief of the Fruit Division has given this matter very careful study, and we feel that on the whole the forecasts and crop estimates have been well confirmed by actual results.

#### EXTENSION OF MARKETS.

The Extension of Markets Division continues to exercise a close supervision over the handling of perishable farm products in transit, and we are able, with the accurate knowledge gained through the reports of the inspectors, to make suggestions from time to time looking towards improvement in refrigerator car and steamship services. It is only fair to say that those in authority in the transportation companies have always shown a readiness to meet such suggestions in a reasonable spirit.

#### BROKEN CHEESE BOXES.

During the season of 1912 the old trouble and complaint about broken cheese boxes, as found in the cars arriving at Montreal, became more pronounced and general than ever before. A special investigation was instituted to determine if possible the exact cause of the unusually large percentage of boxes damaged between the factories and Montreal. Special inspectors were assigned to the freight terminals with instructions to note carefully the percentage of broken boxes in different cars, the names of the stations from which the cars showing excessive breakage came, the shippers' names as far as possible, and also to look for indications as to the manner in which these cars had been loaded. As would be expected, the most damage occurred in those cars in which it was evident that the piles of cheese had been begun at either end, but did not cover the whole of the car, leaving a vacant space in the centre. In such cases, the cheese were invariably found scattered all over the floor of the car where they had fallen or rolled as a result of the jolting received in shunting or during the course of the journey. Other men were sent to the shipping stations to look into specific cases and to bring the matter plainly before those who are responsible for the loading of the cars. It is here that a difficulty is met with in trying to bring about a remedy.

In the first place, the railway companies disclaim any responsibility for the loading of cheese in car lots. That is a rule which is applied generally to all classes of goods. Whether it is a reasonable one or not need not be argued here. The fact



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is the railway companies do not at present pretend to supervise the loading of cheese in carloads. It must be admitted that where there is only one man at a station he can hardly be expected to do it.

The almost universal practice is for patrons of factories to take turns in hauling the cheese to the station, and they are expected to place the cheese in the cars. The trouble is that as the cheese from several factories are shipped from a single station and in the same car, the hauler never knows whether his load is the last or not and, in any case, if one is to judge by the general attitude of patrons in matters of this kind, he doesn't care what happens to the cheese after he gets them off his hands. When the last load of cheese is placed in a car which is only partially filled, the boxes should be distributed in piles of even height over the whole area of the car, or they should at least be stepped down, one box for every row of piles, or better still, every two rows, until in the last row there is only one box on the floor. If this were done, most of the breakages in transit would be avoided. A further precaution is necessary and that is to see that the piles are placed in close contact throughout the car, leaving no vacant spaces.

The matter is important for two reasons. In the first place, many of these broken boxes are 'coopered' at Montreal, or tied with rope after being patched up. Arriving on the Old Country markets in this condition, the appearance is very bad and the sale of the cheese is prejudiced to the ultimate loss of the producer. New boxes have to be put on many cheese, and the cost of these as well as all other expenses of cooperage must in the end also come out of the man who produces the milk. It seems, therefore, that responsibility for breakages from the cause herein recited must rest on the man who under the present system does the loading of the cars.

A practical remedy would be for the railway company to engage, or the factories shipping at one station to combine in the employment of some one on shipping days to supervise the work and to see that the cheese are properly stowed before the car is allowed to be moved. As proof of this, it may be pointed out that in those districts in which the buyer has a representative at the car to receive the cheese, and who attends the loading thereof, the number of broken boxes found in the cars is very much smaller.

The broken box trouble is naturally bound to grow worse rather than better, for the simple reason that the material from which the boxes are made is becoming more scarce every day, and with the increasing cost there is a tendency to use stock which in former days would be discarded as unsuitable for the purpose. Much might still be done at the factories to avoid breakages by exercising greater care in having the boxes fit the cheese properly, but on the whole it is hopeless to expect that the present box will ever become the ideal package, or much better results obtained from it in the future, for the reason that constant deterioration in the material will offset any better care that may be exercised in the handling.

This all emphasizes the need, which has been recognized for some time, for an improved or different style of package; one which will meet the requirements without costing too much, and which is adapted to the existing methods of handling. Many attempts have been made to meet this need, but so far they have all failed for one reason or another.



## THE NEW ZEALAND CHEESE CRATE.

The suggestion has recently been made that Canadian cheesemakers should adopt the New Zealand crate, a style of package with which the writer has had some personal experience. This package, which is illustrated on Plate II, consists of two 12-sided ends with a centre piece to match, covered with slats about 3 inches wide to form a crate holding two cheese. The factories procure the material in 'knocked down,' and during spare time the crates are partly put together by nailing on half the slats. When the proper time comes, the cheese are dropped into place and the remaining slats attached. The ends are sometimes bound with wire or band iron to give additional strength. With regard to durability, the crate is practically a perfect package, as very few of them are ever broken in transit. Once the crate is nailed up there is no occasion to open it until the cheese goes to the counter of the retailer. The cheese may be tested at any time by inserting the trier between the slats. The cost, made up, would probably be 30 or 35 cents per crate, or possibly less in some places according to the price and availability of the raw material. At 35 cents each, the cost would be about equal to the present cost of two boxes and there would be the additional saving for renewals and cooperage, to say nothing of the advantage of having sound unbroken packages on arrival at their destination. A possible objection would be the awkwardness of handling as compared with the present boxes, but that matter does not seem to present any difficulties with the New Zealand cheese. I submit that the crate is well worth a trial in any case.

## CARGO INSPECTION.

The usual staff of cargo inspectors was employed at the ports of Montreal and Quebec during the shipping season of 1912. This service was extended during the year by the placing of a permanent cargo inspector at the port of Halifax, N.S., and one at the Grand Trunk docks at Portland, Me., for the winter months.

## REFRIGERATOR CAR INSPECTION.

The refrigerator car inspection has been carried out along the same lines as in former years, with the addition of an inspector for the Toronto terminals to watch the shipment of butter in refrigerator cars for that city.

## THE REGISTER OF WHOLESALE MARKET QUOTATIONS.

Continuing the work started in 1911, a careful register has been kept of the wholesale weekly prices of butter, cheese, eggs, dressed poultry, bacon, dressed beef, live hogs, live cattle, cash wheat, malted barley and flour in the principal markets of Canada and the United States, the details of which will be found in Appendix II.

## COLD STORAGE.

## CREAMERY COLD STORAGE BONUSES.

Since October, 1896, provision has been made every year for the payment of a bonus not to exceed \$100 to assist creamery owners in the erection of suitable cold storages as a part of the creamery equipment. Plans and specifications are supplied



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by this Branch to applicants, free of cost, as a guide in the erection of cold storages that will meet creamery requirements. The cold storages are inspected and proof must be submitted as to their efficiency before the bonus is paid. The bonus will be paid in future only on cold storages constructed on what is known as the circulation system, with an insulated ice chamber large enough to hold a full season's supply of ice.

Out of 84 applications for this bonus in 1912-13, only 53 were approved. Some failed to qualify on account of poor construction or careless operation, and others were not erected as proposed.

## ICED CAR SERVICES.

The usual services of iced cars for the carriage of butter, cheese and fruit were arranged for with the railway companies. The iced butter cars give the shippers of less than carloads the advantage of a safe transportation, which otherwise would be available only by paying the charges on the minimum carload of 24,000 pounds. These cars are run over regular routes on stated days to pick up all shipments offered. The iced cheese cars and the iced fruit cars are available on demand of shippers to the local railway agent for the shipment of cheese, in carloads, to Montreal or Quebec, during a fixed period covering the hottest weather, and for fruit intended for export in cold storage.

## GUARANTEE OF EARNINGS ON COLD STORAGE SPACE FOR FRUIT TO GREAT BRITAIN.

The earnings of a cold storage chamber were guaranteed for a sufficient number of sailings to London, Liverpool, Glasgow and Bristol, to afford ample space at suitable temperatures for all the tender fruit offered for shipment.

## THERMOGRAPHS.

The recording thermometers which have been used since 1900 to secure records of temperature in cold storage or cool air chambers on board steamships, in refrigerator cars or cold storage warehouses and also with perishable goods shipped as ordinary cargo, have been of great assistance in securing improved services. Through these continuous records of temperature the weak spots in the transportation services have been more easily detected, and the effect of different temperatures and variations in the shipment of fruits has been studied in a manner that would have been impossible without their use. We now have in working order 210 of these instruments, from which 620 records were made in 1912 on steamships sailing from Montreal and Quebec, and 76 on steamships sailing from Halifax, N.S.

## COLD STORAGE SUBSIDIES.

The administration of the Cold Storage Act, which provides for the payment of subsidies on cold storage warehouses erected for the use of the public, is assigned to this Branch. The examination of the plans and specifications which must accompany applications for a subsidy, together with the correspondence arising therefrom, involves considerable routine work of a more or less technical character, and the inspection of the warehouses on completion, and at least yearly during the period



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over which the instalments of the subsidy are spread, necessitates extensive travelling.

There were eight new cold storage warehouses, under contract for subsidies, completed during the year at the following places, namely: Prince Rupert, B.C., Moosejaw, Sask., Regina, Sask., Brandon, Man., St. Thomas, Ont., Mitchell, Ont., Brantford, Ont., and Joliette, Que.

Other contracts have been entered into for the payment of subsidies on cold storage warehouses to be erected at Sault Ste. Marie, Ont., Hebertville, Que., Edmonton, Alta., and Halifax, N.S.

Applications are now under consideration from a number of places, including one for a large modern freezer, chiefly for the fish business, to replace the plant recently destroyed by fire at Port Hawkesbury, N.S.

#### THE COLD STORAGE INDUSTRY.

There is a tendency in some quarters to attribute the increased cost of living, in part at least, to the cold storage warehouse. I do not understand that it is the business of this Branch to defend the cold storage industry from criticism of any kind, either reasonable or unreasonable, but it may not be out of place to offer a few remarks on the subject. That the price of food has risen during the period in which the cold storage industry has been developed is undoubtedly true, but it is also true that prices have risen as much for articles that never go into cold storage as they have for those perishable food products for which cold storage is now a necessity if an adequate supply is to be available during the period of non-production. That the average yearly prices for foods of seasonal production are not any higher than they would be if no cold storage were available is, I believe, a statement which is quite capable of proof. Without the market which the cold storage warehouse affords for the surplus of foods over that which is required for immediate consumption during the period in which these foods are produced, their production would be strictly limited to the current demands and only for such quantities as could be marketed at a profit. Two very good illustrations as to the effect of cold storage on prices are furnished in the record of the produce market during the past six months. Take eggs for instance. The quantity of eggs placed in cold storage in the early part of the season of 1912 turned out to be in excess of the quantity required for winter consumption, partly on account of the mild weather which favoured the production of eggs during the winter months. As soon as it was realized that the market was over-supplied, the prices of eggs went so low as to cause actual loss to many holders and the consumer got the benefit, simply because too large a quantity was placed in storage, and stored eggs must be got rid of before the new crop is available. On the other hand, the quantity of butter in cold storage in Canada at the close of the manufacturing season of 1912 was insufficient to meet the consumptive demands during the winter months. The price naturally rose until it was possible to bring in butter from New Zealand and pay the duty thereon and still sell it at a profit. Some five million pounds of butter have been imported during the past five months to meet the shortage in the Canadian supply. It hardly requires any argument to prove that if there had been an additional ten million pounds or more of butter in cold storage in



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Canada last fall, the price would never have been higher than the export basis, which would have been from 22 to 24 cents per pound, whereas the wholesale price during the past winter was from 30 to 31 cents per pound in Eastern Canada.

These two instances are sufficient answer to the absurd and exaggerated statements which are frequently made as to the supposedly enormous quantities of perishable food products held in cold storage. Such statements are made often by men who do not take the trouble to calculate the quantity of food which is required to feed a given number of people for a stated period, but the absurdity lies in the fact that the greater the quantity there is in storage the better chance there is for the consumer to secure his supplies at a reasonable cost, because after all is said, the law of supply and demand must rule.

With very rare exceptions, it would be the height of folly on the part of any owner of cold storage produce to carry it from one season into the period of the next season's production. Instances have been given of meat having been in store two or three years and, no doubt, there have been cases of that kind, but there is always some explanation. No sane man would carry meat three years at a cost of about 12 cents a pound for storage alone for purposes of speculation. Suggestions have been made, on the grounds of public health, to fix a time limit for certain goods to be held in cold storage. The writer has never been able to see any justification for such a proposal for the reason that the condition of goods coming out of cold storage bears very little relation to the length of the storage period. It is a well known fact that eggs which are gathered during the cool weather of April or May and stored under proper conditions will turn out better during the following winter than eggs which are stored in July or August when the weather is warm and deterioration sets in much more rapidly. The same may be said of butter. Well-made early summer butter, if stored under proper temperatures, will frequently be fresher and sweeter in the month of February following than butter made in October or November. The condition of the goods when placed in store has more to do with their condition when removed than anything else. It very often happens that the owner of meats, dressed poultry and other goods only places them in cold storage when he thinks they are beginning to spoil. It is cases of this kind that have created a prejudice against cold storage goods with some people. For the protection of the industry, cold storage managers should be very careful as to the condition of the goods offered for storage, and to reject anything which shows signs of deterioration.

The writer believes that supervision and inspection of all cold storage warehouses with a view of securing proper sanitation of premises is all the government regulation of the cold storage industry that is needed in this country. The condition of goods in storage, or as removed therefrom, as far as public health is concerned, can be dealt with under existing municipal regulations for food inspection.



## GENERAL.

## PUBLICATIONS.

The following publications have been issued during the year:—

*Bulletins.*

- No.  
 33. 'Cow Testing, with Some Notes on the Sampling and Testing of Milk.' (Supersedes No. 12.)  
 34. 'Modern Methods of Packing Apples and Pears.'  
 35. 'Small Cold Storages.'  
 36. 'Cold Storage for Creameries.' (Supersedes No. 10.)  
 37. 'The Island of Orleans Cheese.'  
 38. 'Co-operation and Fruit Growing.'

*Circulars.*

5. 'Good Reasons for Cow Testing.'  
 6. 'Creamery Cold Storage Bonuses.' (Supersedes No. 4.)  
 7. 'Some Notes Gleaned from the Work of the Dairy Record Centres in 1912.'

*Special Reports.*

- 'Report of the Third Dominion Conference of Dairy Experts.'  
 'Report of the Third Dominion Conference of Fruit Growers.'  
 'Special Report on the Fruit Growing Industry in Canada,' by W. H. Bunting.  
 'A Review of the Dairy Produce Trade,' by J. A. Ruddick.

## PLANS FOR CHEESE FACTORIES, CREAMERIES, FARM DAIRIES, ICE HOUSES AND REFRIGERATORS.

Revised plans for cheese factories and creameries and some new plans for farm dairies, &c., have been prepared during the year, and blue-prints on a working scale are now available for distribution as follows:—

- No. 1.—Combined cheese factory and creamery, with cool curing room and butter storage. Capacity 25,000 pounds of milk daily.  
 2.—Creamery.  
 3.—Skimming station.  
 4.—Cheese factory with cool curing room.  
 5.—Small combined cheese factory and creamery, with cool curing room and butter storage.  
 6.—Small cheese factory with cool curing room.  
 7.—Small creamery.  
 8.—Creamery cold storage.  
 9.—Farm dairy with refrigerator on the circulation system.  
 10.—Farm dairy with refrigerator and ordinary ice house.  
 11.—Ice house with refrigerator and milk room.  
 12.—Small refrigerator circulation system.  
 13.—Small ice house with refrigerator.

## FRUIT CROP REPORTS.

A monthly Fruit Crop Report was issued from May to September (five numbers).



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## MEETINGS.

A large number of meetings have been addressed by the different officers attached to this Branch. Messrs. J. C. Chapais, J. N. Lemieux and I. Trudel have attended dairy, fruit and general agricultural meetings in the French speaking districts of Quebec and Nova Scotia; Messrs. A. McNeill, W. W. Moore, P. J. Carey, C. W. Baxter, Lt. Col. W. W. Brown, G. H. Vroom and R. G. L. Clarke of the Fruit Division have addressed many meetings of fruit growers in the different provinces; and Messrs. Geo. H. Barr, C. F. Whitley, Jos. Burgess, H. W. Coleman and others connected with the Dairy Division have performed similar service at dairy conventions and farmers' meetings.

## THE STAFF IN 1912-13.

The total number of employees in this Branch in both the inside and outside services in 1912-13, including temporary clerks and temporary fruit and cargo inspectors, was 147, being an increase of 53 over the previous year.

In the inside service at Ottawa there were 9 technical or semi-technical officers and 24 clerks, including stenographers.

The outside staff of this Branch numbered 114 persons, employed as follows:—

*Employed by the Year.*

- 1 Assistant Dairy Commissioner (J. C. Chapais).
- 4 Dairy Experts.
- 2 Inspectors of Dairy Products.
- 5 District or Chief Fruit Inspectors.
- 7 Fruit Inspectors.
- 3 Special Fruit Inspectors (Customs officers).
- 1 Demonstrator in Fruit Packing.
- 1 Chief Cargo Inspector (at Montreal).
- 1 Cargo Inspector (Montreal and Portland).
- 1 Cargo Inspector (Halifax, N.S.).
- 1 Chief Cargo Inspector (in Great Britain).
- 4 Cargo Inspectors (at London, Liverpool, Glasgow and Bristol)
- 18 Dairy Recorders.
- 2 Stenographers.

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*Employed for Periods of Four to Seven Months every Year.*

- 36 Temporary Fruit Inspectors.
- 10 Helpers to Fruit Inspectors.
- 9 Cargo Inspectors.
- 4 Iced Car Inspectors.
- 4 Assistants at Dairy Stations.

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## ACKNOWLEDGMENTS.

I am pleased to bear testimony to the faithful services rendered by the technical and clerical staff under my direction. The general record of the clerks in this Branch for punctuality and industry is good.

Mr. J. C. Chapais, Assistant Dairy Commissioner, has, as usual, spent practically the whole of his time in the French speaking districts of the Province of Quebec, where his services have been in constant demand as a lecturer on general agricultural as well as dairy and fruit subjects.

The work of the Chiefs of the Divisions, Messrs. W. W. Moore, Alex. McNeill and Geo. H. Barr, is too generally known to need much comment. I only wish to take this opportunity of expressing my sincere appreciation of their loyal and unselfish service.

The transfer of Messrs. J. N. Lemieux and Joseph Burgess to the Inside Service, after having been employed for ten years in the Outside Service, has added strength to the headquarters staff. Mr. Lemieux's thorough acquaintance with agricultural matters in Quebec and his knowledge of the French language make his services valuable in more ways than one. Mr. Burgess has been assigned chiefly to cold storage work, for which he is well qualified by experience.

I am indebted to the aforementioned officers, and to Mr. C. F. Whitley, who has charge of the compilation of the cow testing records, for the greater part of the work in preparing the appendices to this report.

The District or Chief Fruit Inspectors, Lt. Col. W. W. Brown, and Messrs. G. H. Vroom, C. W. Baxter, R. R. Waddle and R. G. L. Clarke, have by their tact, good judgment and energy helped very materially in giving effect to the reorganization of the fruit inspection services. The services of Mr. F. H. Grindley, B.S.A., as Assistant in the Fruit Division, have been very helpful during the year.

Mr. P. J. Carey in his work as packing and orchard demonstrator has proved to be the right man for that work.

I am indebted to Miss K. B. Robinson, whose grasp of the work of the Fruit Division enabled her to render me valuable personal assistance during the illness of Chief McNeill.

Mr. Wm. Macfarlane, Chief Cargo Inspector at Montreal, is always to be depended on.

The cargo inspectors in Great Britain, who are local men, have been diligent and apparently on the alert for anything of interest relating to the Canadian produce trade. They have furnished excellent reports respecting their work and observations.

I have the honour to be, Sir,

Your obedient servant,

J. A. RUDDICK,  
*Dairy and Cold Storage Commissioner.*



APPENDIX I.

REPORT OF THE ASSISTANT DAIRY COMMISSIONER.

SAINT DENIS (EN BAS) COUNTY OF KAMOURASKA, P.Q., March 31, 1913.

SIR,—I beg leave to present my twenty-third report as Assistant Dairy Commissioner, which covers the period of twelve months between April 1, 1912, and March 31, 1913.

SUMMARY OF YEAR'S WORK.

With the exception of two trips made to Ottawa for conferences with the minister, and one undertaken to meet Mr. John Bright, Live Stock Commissioner, about Farmers' Institute meetings to be held in the Province of Quebec, I have devoted all my time to the Province of Quebec, and I have during the year made ninety-three visits in twenty-seven counties in eighty-one localities. I have delivered one hundred and eight lectures before fifteen thousand and eighty-five persons, of whom three hundred and ninety-seven were butter and cheese makers. The average attendance at those lectures was one hundred and forty persons. Of the eighty-one localities visited, I went for the first time to fourteen of them. I have travelled nine thousand and four hundred miles to perform my work.

I give here a list of the counties and localities I have visited, and where I have delivered lectures, with reference letters indicating the purpose of the meetings I have thus attended.

TABLE OF VISITS AND LECTURES.

Counties.	Localities.	Visits.	Lectures.	Letters of Reference.
	<i>Province of Ontario.</i>			
Ottawa.....	Ottawa City . . . . .	3	3	a, e
	<i>Province of Quebec.</i>			
Bagot .....	Ste. Rosalie.....	1	1	c
Beauce .....	St. Hubert de Spalding..	1	1	c
	Webster.....	1	1	c
Beauharnois .....	Valleyfield.....	1	1	b
Bonaventure .....	Carleton..	1	1	c
	Maria.....	1	1	c, f
	New Richmond.....	1	1	c
	Paspebiac .....	1	1	c
	St. Alphonse de Caplan..	1	1	c, f
	St. Bonaventure.....	1	1	c, f
	St. Charles de Caplan.....	1	1	c, f
	St. Godfroy.....	1	1	e
	St. Jean l'Évangéliste.....	1	1	c
	St. Omer.....	1	1	c
Chicoutimi.....	St. Alphonse.....	1	2	b
	Ste. Anne.....	2	2	b
Compton.....	Chesham.....	1	1	c
	East Angers.....	1	1	c
	La Patrie.....	1	1	c
	Piopolis.....	1	1	c
	St. Léon.....	1	1	o



TABLE OF VISITS AND LECTURES—*Concluded.*

Counties.	Localities.	Visits.	Lectures.	Letters of Reference.
	<i>Province of Quebec—Con.</i>			
Frontenac .....	Megantic. ....	1	1	c
	Ste. Cécile de Whitton.....	1	1	c
Jacques Cartier.....	Macdonald College.....	2	2	a, g
	Macdonald College.....	—	2	a, e, g
Kamouraska .....	St. André .....	1	1	c
	St. Denis.....	2	2	c
	St. Pacôme. ....	1	1	c
	St. Paschal. ....	1	1	b
	Ste. Anne de la Pocatière. ....	1	—	a, g
	Ste. Anne de la Pocatière. ....	3	3	b
	Ste. Anne de la Pocatière. ....	1	1	e, g
Lake St. John.....	Normandin. ....	1	2	b
	Roberval.....	1	1	a, g
	Roberval. ....	1	2	b
	St. Jérôme.....	1	2	b
Laval.. ..	St. François de Sales.....	2	2	b
L'Islet.....	St. Roch des Aulnaies.....	1	1	b
Matane.....	St. Joseph de Lepage.....	1	1	c
	St. Octave de Métis .....	1	1	c
Montmagny.....	Notre Dame du Rosaire.....	1	2	c
Montmorency.....	Ste. Famille Isle d'Orléans .....	1	2	a
	Ste. Famille Isle d'Orléans .....	—	2	a, e
Quebec City. ....	Quebec City.....	1	1	a
Quebec County.....	Stadacona .....	1	1	a
Rimouski .....	Notre Dame du Sacré Coeur.....	1	1	c
	Pointe au Père. ....	1	1	d
	St. Anaclet. ....	1	1	c
	St. Donat .....	1	1	c
	St. Gabriel. ....	1	1	c
	St. Mathieu .....	1	1	c
	St. Simon.....	1	—	f
	St. Valérien.....	1	1	c
	Ste. Blandine.....	1	1	c
St. Hyacinthe.....	La Présentation.....	1	1	c
	St. Charles. ....	1	1	c
	St. Damase. ....	1	1	c
	St. Denis. ....	1	1	c
	St. Thomas d'Aquin.....	1	1	c
	Ste. Madeleine.....	1	1	c
Shefford.....	Granby .....	1	1	c
	Roxton Falls.....	1	1	c
	St. Alphonse de Granby.....	1	1	c
	St. Joachim.....	1	1	c
	St. Valérien.....	1	1	c
	Ste. Cécile de Milton.....	1	1	c
	St. Pudentienne.....	1	1	c
Sherbrooke.....	Ascot Corner .....	1	1	c
Terrebonne.....	St. Jérôme.....	1	2	b
	Ste. Thérèse. ....	1	2	b
	Terrebonne. ....	1	2	a
Two Mountains.....	La Trappe, Oka.....	2	4	a, g
	St. Benoit.....	1	2	b
Vaudreuil.....	Rigaud.....	1	2	b
Wolfe ...	Disraéli .....	1	1	c
	Garthby.....	1	1	c
	St. Adolphe de Dudswell.....	1	1	c
	St. Gérard.....	1	1	c
	Weedon.....	1	1	c
Wright.....	Bouchette .....	1	1	c
	Cameron. ....	1	—	f
	Maniwaki .....	1	1	c
	Maniwaki .....	—	1	c, e
	Montcerf.....	1	1	c
	Rivière Joseph .....	1	1	d
	Ste. Cécile de Masham.....	1	1	c
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Reference letters indicate—

- (a) Federal and provincial meetings.
- (b) County and district meetings.
- (c) Farmers' clubs meetings.
- (d) Parish meetings.
- (e) English lectures.
- (f) Factory inspections.
- (g) Visits to colleges and schools.

The above table shows that I have attended twelve federal and provincial meetings, twenty-six county and district meetings, fifty-seven farmers' club meetings and two parish meetings; that I have delivered eight lectures in English, made six factory inspections and delivered eleven lectures in colleges and schools.

## PROVINCIAL MEETINGS.

The first of the provincial meetings which I attended during the last twelve months was the annual convention of the Province of Quebec Agricultural Missionaries, held at Oka on July 9 and 10. I delivered before that convention a lecture on 'French Technology in Dairying,' and another one on 'Means of Lessening the Cost of Living.' The second meeting which I attended was a horticultural meeting which took place in the Stadacona Exhibition Grounds during the Quebec Provincial Exhibition, held on August 28 and 29. I gave an address on 'Pruning and Spraying.' The third one was that of the Quebec Pomological Society, which held its summer meeting at Ste. Famille, Isle d'Orleans, Montmorency county, on September 18 and 19. At that convention I delivered in French and in English two lectures, one on 'Specialization of Fruit Growing in Eastern Quebec,' and one on 'Notes on Plums grown in J. C. Chapais' Orchard.' The fourth provincial meeting was the annual convention of the Dairymen's Association of the Province of Quebec, held at Terrebonne, Terrebonne county, on December 3 and 4, before which I delivered two lectures, one on 'The Law and Good Milk,' and one on 'Advantages of the Production of Milk in Winter.' The fifth provincial meeting was at Macdonald College, Jacques Cartier county, being the winter convention of the Quebec Pomological Society, on December 4 and 5, and before which I delivered one lecture on 'The Enemies of our Orchards,' in French and in English. The sixth and last provincial meeting I attended this year was the winter convention of the Quebec Society for the Protection of Plants, held at Macdonald College. I delivered a lecture there on 'The Blister Beetles.'

Besides these meetings, I also accepted an invitation to deliver two lectures before the students of the Oka Agricultural Institute, one on 'Social Order and Economy,' and one on 'Nobleness of the Farmer's Calling.' This was on February 23.

On October 22, I attended the inauguration of the Ste. Anne de la Pocatière School of Agriculture by the Honourable the Prime Minister of the Province of Quebec.

This completes the series of the provincial meetings which I attended during the last twelve months.

## COUNTY AND DISTRICT MEETINGS.

I attended this year five county and district meetings. Three of them were held at Ste. Anne de la Pocatière, on July 28, August 22 and January 31, for the organization of a Farmers' Agricultural Co-operative Society in Kamouraska and L'Islet counties. I give a memorandum concerning that society, which should be the first of a good number of similar associations much needed amongst the Quebec farmers.



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On July 28, 1912, Mr. G. A. Gigault, Provincial Deputy Minister of Agriculture, invited me to attend at the Ste. Anne de la Pocatière Agricultural School, a meeting convened for the organization of an agricultural co-operative society. Two lectures were delivered, one by Mr. Gigault and one by myself, before an assembly of 325 farmers, and 65 of them were enlisted after they had heard what had been said by the two lecturers on behalf of such associations.

On August 22, another meeting was called at the same place for the regular and effective organization of the society. After due convocation, the members present, 150 in number, having heard two more lectures from the two lecturers heard at the first meeting, proceeded to the election of the first directors of the new association.

Two were elected for Kamouraska county and three for L'Islet county.

After the election of the directors, who were unanimously chosen, the Rev. Abbe O. Martin, Director of the Ste. Anne de la Pocatière Agricultural School, was unanimously named president, and Mr. L. A. Dupuis, public notary, of Ste. Anne de la Pocatière, was appointed secretary and treasurer of the new association, of which the official name is 'La Société Coopérative de Kamouraska.'

At a subsequent meeting of the board of directors held a few days later at Ste. Anne de la Pocatière, which place has been chosen as the headquarters of the association, it was decided, as time was pressing, that the society would immediately proceed to the sale of the abundant crop of plums of the district, which would soon be ready to be put on the market and, moreover, would also open a temporary canning factory for the preserving of that part of the plum crop which would not find a ready sale on account of the accumulation of the fruit on the market. Mr. Louis Gagnon, of St. Pacôme, was engaged as temporary clerk to help the president and secretary during the rush of the work so as to give time to the directors to look for a permanent manager for the regular business of the society.

Three carloads of plums gathered in Kamouraska and L'Islet counties have been shipped, and ten thousand quarts of fruit have been canned at the temporary canning factory of the society.

The society bought a carload of 10,000 plum baskets of the capacity of 11 quarts each, and 8,000 boxes of the capacity of two gallons each, for the use of its members to pack their fruit. Boxes were supplied at four cents and baskets at five cents net.

Two hundred and fifteen farmers are now registered on the list of members of the society. Each member is a shareholder for one share of \$10, to be paid in ten years at the rate of \$1 a year. The society receives from the Quebec Department of Agriculture a grant of \$500 for its organization and another grant of \$500 for the opening of its canning factory.

A horticultural exhibition held at St. Roch des Aulnaies, L'Islet county, on September 24, open to the horticulturists and fruit growers of L'Islet, Kamouraska and Montmagny counties, which gave an excellent idea of the benefit of the co-operation above mentioned, gave me the occasion to go to the fourth district meeting I attended this year. I delivered a lecture there on 'Plum Culture below Quebec.' A fifth meeting, organized by the Kamouraska County Horticultural Society at St. Paschal on February 14, was the last county meeting attended. I delivered a lecture on 'The Importance of Horticulture as a Branch of Agriculture.'

#### FARMERS' INSTITUTE MEETINGS.

During February and March of the present year, Mr. Alfred Gingras, of St. Césaire, Rouville county, and myself attended a series of Farmers' Institute meetings held in the following localities:—



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Counties.	Localities.
Laval.. . . . .	St. François de Sales.
Terrebonne.. . . . .	Ste. Thérèse.
	St. Jérôme.
Deux Montagnes.. . . . .	St. Benoit.
Vaudreuil.. . . . .	Rigaud.
Beauharnois.. . . . .	Valleyfield.
Lake St. John... . . . .	Normandin.
	Roberval.
	St. Jérôme.
Chicoutimi... . . . .	St. Alphonse.
	Ste. Anne.

The above list shows that we visited seven counties and eleven localities. We held twenty meetings. At St. François de Sales and at Ste. Thérèse we were in company with Mr. Charles Mortureux, Department of Agriculture, Ottawa. Mr. Mortureux gave a lecture on 'Stables, their Sanitary Construction and Ventilation,' and another one on 'Corn Culture.' Mr. Gingras delivered one lecture on 'Ensilage and its Advantages for the Farmer,' a second one on 'Horse Breeding,' and a third one on 'Hog and Sheep Raising.' I myself delivered two lectures, one on 'The Raising, Selection and Care of the Dairy Herd,' and one on 'Weeds and their Eradication.' We met, while delivering that series of lectures, thirteen hundred and sixty-three farmers. These meetings took place between February 17 and March 11.

## LECTURES BEFORE FARMERS' CLUBS.

I have, as usual, delivered many lectures before farmers' clubs in the Province of Quebec. My work in that connection was divided into seven series, including a total number of fifty-seven lectures delivered in fifty-six localities in the thirteen counties of Rimouski, Matane, Bonaventure, Kamouraska, Wright, Sherbrooke, Wolfe, Frontenac, Beauce, Compton, Bagot, St. Hyacinthe and Shefford.

The first series was held in Rimouski and Matane counties during the month of July and in the ten localities visited I delivered a lecture on 'The Amelioration of the Dairy Herd,' advocating very strongly the organization of cow testing associations among the farmers of these two counties.

The second series was held in Bonaventure county in September, a special report of which I append here.

*Dairying in Bonaventure County.*—In the year 1906, I had an opportunity of visiting four localities in Bonaventure county, and found that county well adapted for the production of good dairy products. Making a report of that trip, I wrote the following lines:—

'In that section of the Province of Quebec the populace is divided into three classes, namely, farmers, woodsmen and fishermen, none of them deriving from their respective industries all the profit available. In my lectures, I endeavoured to show the great advantage to the farmers settled all along the shores of the St. Lawrence and Bay of Chaleur, in giving the first place to agriculture, so that it may be a source of mutual benefit between the farmers and those who follow the two other industries referred to. For example, the lumbering industry offers an outlet for the sale of hay, oats, potatoes, pork, &c. The other, the fishing industry, is a source of valuable manuring material for the improvement of the land. The offal of fish, seaweed, varech, &c., constitute very valuable fertilizers for the soil on which they are applied. Moreover, if the people understood how to connect these two sources of prosperity with the dairying industry, which is beginning to develop in that region, they would soon make it one of the richest sections of the province. The climate of that region is particularly well adapted for the production of good butter and cheese,



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for it favours the growth of forage plants even during the most severe droughts. It is also specially favourable for the preservation of milk in good condition during the warmest period of summer, owing to the cool nights, which are one of the characteristic features of those localities.'

This year (1912) I delivered a series of lectures in ten localities of that county, and I was glad to see that the farmers have turned their minds towards dairy husbandry. In 1906, I found two cheese factories, one at Maria and one at New Richmond, this last one being very poor. This year I found things in a much better condition throughout the county. So as to give a more complete idea of what is going on there respecting the dairy industry, I will first mention the few sterile efforts that have been made for its development, with no success to speak of, between the year 1894 and the present one. I found that cheese factories had been opened in a few localities, at St. Jules in 1894, at Port Daniel in 1897, at St. Bonaventure in 1899, at New Richmond in 1900, at St. Charles de Caplan in 1901, and that none of these establishments have fulfilled the hopes of their owners. Only one cheese factory, owned by Reverend Jacob Gagne at Maria in 1895, has survived of all those above mentioned.

But last year a wave of co-operative effort passed over the County of Bonaventure, and in four localities four co-operative societies having recruited their numbers amongst the farming community, have built and opened factories, three for butter and one for cheesemaking. Counting with those four the old cheese factory of Maria mentioned above, owned by Reverend Jacob Gagne, which this year has been changed into a butter factory, we then have in existence in 1912 four butter factories and one cheese factory in that county.

I give here a few notes gathered in making the inspection of those factories.

Maria: butter factory owned by Reverend J. Gagne; building 55 feet by 32; first opened as a cheese factory in 1895 and receiving then 1,500 pounds of milk; now a butter factory receiving 6,000 pounds of milk.

Rivière Caplan: butter factory, owned in co-operation by 55 farmers; building 45 feet by 26; opened this year and receiving 2,000 pounds of milk.

St. Charles de Caplan: butter factory, owned in co-operation by 70 farmers; building 45 feet by 26; opened this year and receiving 4,500 pounds of milk.

St. Alphonse de Caplan: cheese factory, owned in co-operation by 50 farmers; building 35 feet by 22; opened this year and receiving 2,000 pounds of milk.

St. Bonaventure: butter factory, owned in co-operation by 80 farmers; building, two storeys 55 feet by 25, opened in 1907 and receiving this year 5,600 pounds of milk.

The owners of the above mentioned factories congratulated themselves upon the result obtained from the organization of their enterprise. The money received from the proceeds of the present season was almost all that they had to buy the necessities of life with during the winter, for as it happened everywhere else in the Province of Quebec their grain crops were very poor, though their hay crop was an average one.

There are two other localities in Bonaventure county where it is to be hoped three new factories will be organized on a co-operative plan this year. One is the parish of St. Jean l'Évangéliste, where the western part of the locality keeps and feeds enough cows on the fine flats of the Rivière Nouvelle for the opening of a factory, and the eastern part together with the western part of the Parish of St. Omer could get enough milk from the cows of that section for another factory.

New Richmond is the other locality where I anticipate this year the opening of a new co-operative butter factory to take the place of the old cheese factory opened there in 1900 and closed a few years ago. Everything is almost organized now to get it in operation in 1913.

Most of the farmers I have met in Bonaventure county are making plans to follow a system of rotation on their lands that will give them the means of raising



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and feeding more cows, and their farmers' clubs are beginning to buy with the grants received from the government first-class bulls of the Ayrshire and Canadian dairy breeds of cattle to improve the standard of their common cows.

I delivered the third and fourth series of lectures before farmers' clubs in Wright and Wolfe counties, eleven in all, during October and November, giving before those clubs lectures on the following subjects: 'Amelioration of the Dairy Herd,' 'Care of Milk,' 'Economy in Agriculture,' and 'Weeds and their Eradication.'

The fifth, sixth and seventh series of lectures which I delivered before farmers' clubs were given in Compton, Frontenac, Beauce, St. Hyacinthe and Shefford counties, having as a companion for those series Mr. L. P. Bernard, farmer, of Granby. We have travelled together through twenty localities, lecturing on the following topics: 'Amelioration of the Dairy Herd,' 'Weeds and their Eradication,' 'Means of keeping the Boys on the Farm,' 'The Bacon Hog,' and 'The Making of Ensilage.'

## LECTURES BEFORE PARISH MEETINGS.

Very few parishes in Quebec are now without an organized Farmers' Club. I met two only this year, those of Point au Père, Rimouski county, and of Rivière Joseph, Wright county. Before the farmers of these localities, I showed the usefulness of these clubs and gave them the directions necessary to organize them.

## FACTORY INSPECTION.

On account of a serious throat affection from which I suffered in the spring of 1912 at the season when I used to make factory inspections, I made only six in the course of the year. They were made following the mode already described in my previous reports.

## VISITS TO SCHOOLS AND COLLEGES.

I visited this year the School of Agricultural Household Science of the Reverend Ursuline Sisters of Roberval, Lake St. John, where I delivered before the students one lecture on 'Practical Economy of the Farmer's Wife.'

I was invited to deliver two lectures as mentioned above in this report, before the students of Reverend Trappist Fathers' Agricultural Institute of Oka.

I also delivered a lecture before the students of the Agricultural School of Ste. Anne de la Pocatière, Kamouraska county, on 'The New York Plum Scale.'

## THE CONGRESS OF THE FRENCH LANGUAGE, 1912.

In the week beginning June 23, 1912, a congress of the French language was held at Quebec. I had been invited to attend it, and was the only French-Canadian agriculturist asked to deliver a paper on 'The Technical French Terminology of the Agricultural Industries.' Having been duly authorized to accept this invitation, I prepared in June an elaborate essay on that matter and presented it before the congress on June 27.

## OFFICE WORK.

I have had in my office during the last twelve months, to perform the same amount of work as during the preceding year, to answer my numerous correspondents. I have devoted much of my time to the preparation of many memoranda, lectures and papers for the agricultural press, for my own meetings, for special conventions and for various other purposes. I append here a list of some of these papers. Some of them were written in French, some in English and French. Those



in French are indicated by the letter 'F' following them; those in English and French by the letters 'E. & F':—

An Ideal Butter Factory—F.  
 Apropos of the Coming Arbour—F.  
 Corn or Roots—F.  
 Centrifugal Brise Mousse—F.  
 Epis glanes (gleaned ears)—F.  
 The Trail of the Milk Cow—F.  
 Tomato Rot—F.  
 Dairy Chronicle—F.  
 Vitality of Seeds—F.  
 Actualities in the Butter Industry—F.  
 Fodder Plants for Land subject to Inundation—F.  
 Machines for Milking Cows—F.  
 Difficulties met in Autumn Churning—F.  
 Specialization of Fruit Culture in Eastern Quebec—E. & F.  
 Dairying in Bonaventure County—E. & F.  
 Kamouraska Plums—E. & F.  
 Soil Exhaustion—F.  
 Three Enemies of Our Orchards—E. & F.  
 Domestic Cheesemaking—F.  
 Advice concerning Seeds—F.  
 Advantages of Winter Dairy Practice—F.  
 Machines to dig Potatoes—F.  
 Influence of Food on the Fat in Milk—F.  
 Fishy Flavour in Butter.—F.  
 A Patriarchal Couple.—F.  
 The Island of Orleans Cheese—E. & F.  
 Technical French Terminology of Agricultural Industries—F.  
 Agricultural Progress at Lake St. John—F.  
 An Old Enemy of the Potato—E. & F.  
 A Glance at Dairying in Quebec—F.  
 Report of the Assistant Dairy Commissioner, 1912-13—E. & F.  
 Classification of Fruit Trees for the Washington Department of Agriculture—E.

#### CLOSING REMARKS.

One of the most interesting points of my work this year has been the part I have taken in the organization of an agricultural co-operative society in Kamouraska and L'Islet, two counties of eastern Quebec. Until about a score of years ago, little had been done along this line in eastern Quebec on account of difficulties, especially from climate; but now, science having helped us, varieties of fruit have been found that have encouraged fruit growing in localities where formerly, for want of knowledge, nothing was done. We find that, especially in plums and small fruits, there is a good deal of progress made. No doubt the example set by the Kamouraska Co-operative Society during the past year will bring further better results. That for the fruit industry, coupled with the educational efforts made for the introduction of cow testing associations in our dairy industry, will certainly prove two efficient sources of development of agricultural progress.

I have the honour to be, sir,

Your obedient servant,

J. C. CHAPPAIS.



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## APPENDIX II.

## REPORT OF W. W. MOORE, CHIEF, EXTENSION OF MARKETS DIVISION.

SIR,—I have the honour to present herewith the report of the Extension of Markets Division for the year ending March 31, 1913.

## ORGANIZATION AND SCOPE OF THE DIVISION.

This Division was established in the year 1900, primarily for the purpose of locating and strengthening the weak spots in the transportation facilities for perishable produce between Canada and Great Britain, and to carry out this design it was necessary to establish an independent system of inspection that would reveal the conditions that were detrimental to the building up of an export trade in fine food products such as cheese, fruit, butter, &c. It was further intended that there should be more or less supervision of the loading and unloading of perishable cargo so that loss from careless or rough handling might be minimized. For the first three years two inspectors were employed at Montreal during the season of navigation and one each at the ports of Liverpool, London, Glasgow and Bristol. In 1903 it was decided that the results obtained were of sufficient importance to warrant the work being planned on a more comprehensive scale and placed on a permanent basis, and the Montreal staff was enlarged so as to cover the sailing of every steamer having food products on board. In the following year, the inspection and supervision of the special refrigerator car services for the carriage of butter, cheese, &c., to Montreal for export was transferred from the Cold Storage Division to the Markets Division in order that all the work carried on by the department for the improvement of transportation should be under the direction of one division. In succeeding years the scope of this inspection work has been gradually enlarged, so that it now covers Toronto, Montreal, Quebec, Halifax and Portland on this side of the Atlantic, and five ports in Great Britain as well, and at the same time its supervisory character has been strengthened. From the first it has been our policy to enlist the sympathy and co-operation of the railway and steamship companies rather than their antagonism, and on the whole our relations have been pleasant. Reforms in methods of handling food products at ports and better accommodation in steamships have been brought about without fuss or friction, and the conditions to-day under which perishable freight is transported from interior points in this country to the United Kingdom are a vast improvement over those existing ten years ago.

## DIRECT RELATION OF CARGO INSPECTORS TO MARKET EXTENSION.

Assuming that Canadian food products are of fine quality when they leave the hands of the producer, it is obvious that the more nearly perfect their condition when they reach the consumer the greater will be the demand for them. Inspection services, therefore, that safeguard these products en route to the ultimate market are direct and important factors in market extension work.

## EXPORT TRADE THE OBJECTIVE.

It is clear from what has already been said that this Division was organized solely for the purpose of removing difficulties that threatened the development of the export trade, and that it was not supposed to concern itself with the home trade



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except in an incidental manner. Within recent years, however, conditions have signally changed. The rapid increase in urban population and the large immigration into our western provinces, where grain growing is the rule and mixed farming the exception, has created such a home demand for food products that in many lines of production our domestic trade is much more important than our export trade. This shift in our agricultural commerce has not passed unnoticed by this Division, and during the past few years marketing conditions in this country have been carefully studied and comparative prices of farm products in various markets compiled for future reference.

#### THE MARKETING PROBLEM.

Investigations in both this country and the United States have shown that there is unquestionably too great a spread between the price the farmer gets for much of his produce and the price the consumer is obliged to pay. Various causes for this condition have been advanced and many remedies suggested, but it is undoubtedly true that the lack of organization in the marketing end of the farming business has been responsible for a good deal of the difficulty and that the formation of co-operative selling associations offers the most promising solution of this part of the problem. I need hardly say that this Division is heartily in sympathy with the co-operative idea in all its phases and hopes to see it grow rapidly during the next decade. Much, however, will depend on the spirit animating those who are local leaders in this movement as well as on wise organization and the maintenance of sound business principles.

It has been suggested that current market prices of farm products should be published regularly by a government department, and that forecasts of prices should also be issued. Personally I do not consider such a scheme either practicable or desirable. Broadly speaking, what seems to be needed is a more even distribution of perishable produce, so as to avoid gluts, the most direct connection possible between producer and consumer and, particularly in the case of apples, a nation-wide advertising campaign that would increase consumption.

With regard to the first point, it is a fundamental fact that proper distribution can only be managed from the growers' end and it is there that the problem must be attacked and the remedy applied.

With reference to the second point, there is no reason why considerable quantities of such produce as cream, butter, fruit, eggs, vegetables, &c., should not be sold direct to the consumer by the producer *if each were known to the other*, and if a parcels post is established in this country in the near future, as now seems probable, it will prove a powerful factor in stimulating direct trading of this kind.

The third point mentioned—an advertising campaign—is sadly needed in the apple industry. Further on under the heading 'Future Markets for Canadian Apples' it is shown that the average yearly consumption of apples per head in Canada is ridiculously small. Millions of dollars are spent by private firms and by corporations in advertising the merits of their goods, but not a dollar is directly expended to boost the sales of apples. If a manufacturer of patent medicines or breakfast foods had an article to exploit possessing the dietary value of the apple, he would not hesitate to spend one million dollars in various advertising schemes before placing one package on the market.

#### CHEESE TRANSPORTATION.

In the early part of the summer of 1912 complaints were received by this department from Montreal cheese merchants to the effect that the proportion of broken boxes among the consignments of cheese they were receiving by rail from points in







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this quantity Ontario supplied 238,000 barrels, British Columbia 75,000 barrels, Nova Scotia 18,000 barrels and the United States 164,000 barrels. We estimate that another 60,000 barrels of apples were marketed in northern and new Ontario, including Fort William, Port Arthur, Sault Ste. Marie, North Bay, Sudbury, the Cobalt district, &c., of which the proportion supplied by the United States would probably not exceed 10 per cent.

#### CARGO INSPECTORS AT CANADIAN PORTS.

During the summer and fall season of 1912 six cargo inspectors were employed at Montreal and one at Quebec. At Halifax one cargo inspector was employed after October first and a second inspector during the rush of the apple shipping season, between the middle of January and the end of March.

#### CARGO INSPECTOR AT PORTLAND, ME.

During the year an extension of our cargo inspection work was made by the sending of an inspector to Portland for the winter season. This is the first time that a Canadian cargo inspector has been employed at a United States port, and his presence proved very beneficial, especially in regard to shipments of Canadian cheese. After the close of the season of navigation in the St. Lawrence the bulk of the cheese exported from Canada is shipped by way of Portland, and the first reports received from our inspector indicated that the cheese were being improperly loaded in the cars at Montreal and, as a consequence, the boxes were found to be very seriously damaged when the car doors were opened at Portland. Vigorous representations were made by this office to the Freight Traffic Department of the Grand Trunk Railway, and as a result a man was delegated to superintend the loading of these cheese cars at Montreal. A very noticeable improvement was soon effected, and for the balance of the season the boxes arrived at Portland in good condition. During the first month when the percentage of breakage in each carload was high, letters were sent to the shippers notifying them of the condition of their consignments on arrival at Portland.

The presence of our inspector at Portland also had a good effect on the handling of Canadian apples and other perishable goods. Previously the longshoremen at that port had not been subject to a restraining influence of this character, and naturally their way of handling perishable cargo was more strenuous than at the port of Montreal where government cargo inspectors have been stationed for a number of years.

#### CARGO INSPECTORS IN GREAT BRITAIN.

As usual five cargo inspectors have been employed the past year in Great Britain covering the ports of Liverpool, Manchester, London, Glasgow and Bristol, and their annual reports, which will be found a few pages further on, contain a resumé of their work and first hand information of value respecting our export trade with Great Britain.

#### BUTTER TRANSPORTATION.

The customary special refrigerator car service for butter were in operation from May 13 to October 12, and three inspectors were employed at Montreal to report the condition of these cars, temperature of the butter, &c. A summary of the Montreal inspectors' reports gives a total tonnage of over twenty-one million pounds of butter in these cars, with the butter at an average temperature of 53½ degrees.

A refrigerator car inspector was also stationed at Toronto to report the condition of the butter cars on arrival there, quantity of butter per car, icing, &c. His reports for the period from May 27 to October 12 cover 271 cars with 3,770,441 pounds of butter. The average temperature of the butter was 52½ degrees.



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## USE OF SECOND-HAND BUTTER TUBS AND BOXES UNDESIRABLE.

A regrettable feature of the butter receipts at Montreal last season, particularly from districts served by the Canadian Northern Railway, was the increasing use of second-hand boxes and tubs for creamery as well as for dairy butter. This practice should be discouraged, as it is a pity to see a fine food product such as creamery butter put up in a package that looks anything but clean and inviting. Creamery-men who are using boxes or tubs that are old, stained and generally disreputable in appearance are following a mistaken and short-sighted policy.

## OPENING OF THE ARGENTINE MARKET FOR CANADIAN APPLES.

As a result of correspondence exchanged during the summer with the Canadian Trade Commissioner at Buenos Aires, an order was placed by this Division with the United Fruit Companies of Nova Scotia, Limited, for a sample shipment of apples which went forward from Halifax via Liverpool the latter part of October. Unfortunately the consignment missed connection at Liverpool and was held there until the next direct steamer sailing two weeks later. The voyage from Liverpool to Buenos Aires occupied twenty-five days. The varieties comprised Kings, Ben Davis, Baldwins and Starks, packed both in barrels and boxes. The freight charges from Halifax to Liverpool in ordinary storage averaged about 60 cents per barrel and from Liverpool to Buenos Aires in cold storage about \$6 per barrel. The apples were landed in Buenos Aires in good order and condition, and the Kings were reported to be the variety best suited to that market, owing principally to their size and fine colour; Ben Davis were given second place, while Baldwins were said to be rather small for that market. Starks were not liked because of their unattractive appearance.

In the Argentine the season for Canadian apples lasts from early autumn until about the first of the year, when the local fruit and apples from Tasmania begin to arrive. Canadian exporters could probably control that market for two or three months in the year provided they ship choice fruit, well packed in boxes. The market, of course, is a limited one with a capacity of from eighty to one hundred thousand boxes each year, and supplies are drawn from Tasmania, New Zealand, Spain, Italy and the United States. Retail prices in Buenos Aires range in our currency from 42 cents to \$2.15 per dozen apples.

There is direct steamship connection between New York and Buenos Aires, and the freight rate is lower than from Liverpool, but it is very difficult to get cold storage space during October, November and December, as all the accommodation provided is usually booked long in advance. In addition to the lines between Liverpool and Buenos Aires steamers also sail regularly from the port of Southampton.

## THERMOGRAPHS.

This department now owns and makes use of two hundred and ten thermographs, the majority of which will register continuously for fourteen days, although we have some that will record for seven days and others for thirty-five days. These self-recording thermometers are used principally with shipments of perishable goods loaded in steamers at Montreal and at Halifax; but during the 1912 fruit shipping season in British Columbia ten were used in cars carrying fruit from points in that province to market centres in the prairie provinces.

## COMPARATIVE PRICES IN CANADIAN, UNITED STATES AND BRITISH MARKETS.

Again this year I present comparative wholesale quotations for various food products in the leading markets in Canada and the United States. Included will also be found comparative quotations for the principal varieties of apples not only



in Canadian and United States markets but in Liverpool, London and Glasgow as well. Prices for these three latter markets have been furnished by our inspectors resident there.

NOVA SCOTIA APPLE SALES, 1912-13.

The following statement shows the total quantity of apples shipped from the Province of Nova Scotia in the season of 1912-13, and the quantities sold in the local market:—

(This table includes all shipments made during the season, including the month of April, 1913.)

Shipping Port.	Market (or point for trans-shipment.)	Barrels.	Half Barrels.	Boxes.
Halifax.....	London.....	426,768	374	5,064
".....	Liverpool.....	188,834	1,540	1,386
".....	Glasgow.....	47,812	24	3,823
".....	Bristol.....	22,202	.....	203
".....	Manchester.....	20,092	.....	.....
".....	Hamburg.....	34,118	326	151
".....	Newfoundland.....	20,015	.....	.....
".....	South Africa.....	2,604	1,480	13,272
".....	Bermuda.....	2,420	.....	.....
".....	Carliff.....	627	.....	.....
".....	Newcastle.....	288	.....	.....
".....	Birmingham.....	755	.....	.....
".....	Bradford.....	719	.....	.....
".....	Sheffield.....	160	.....	.....
".....	Sundswall.....	288	.....	.....
".....	Aberdeen.....	198	.....	.....
".....	Copenhagen.....	300	.....	.....
".....	Stockholm (Sweden).....	525	.....	.....
".....	Aarhuus (Sweden).....	759	.....	.....
".....	Gottenburg.....	100	.....	.....
".....	Antwerp.....	165	.....	.....
".....	Buenos Aires.....	.....	712	.....
".....	Swansea.....	92	.....	.....
Total from Port of Halifax.....		769,921	4,456	24,199
St. John.....	.....	6,936	.....	.....
Annapolis.....	.....	5,800	.....	.....
Margaretville.....	.....	240	.....	.....
Bear River.....	.....	2,000	.....	.....
Yarmouth.....	Boston.....	1,800	.....	.....
By rail.....	Winnipeg and West.....	18,000	.....	.....
".....	East of Winnipeg.....	80,100	.....	.....
.....	Halifax.....	50,000	.....	.....
.....	New Brunswick.....	44,000	.....	.....
Total.....		978,797	4,456	24,199

Equal to 989,091 barrels.

ST. JOHN SHIPMENTS.

According to the statement furnished by the Dominion Fruit Inspector for the Province of New Brunswick, the total shipments through the port of St. John during the winter season of 1912-13 amounted to 28,675 barrels and 3,292 boxes.

FUTURE MARKETS FOR CANADIAN APPLES.

The greatest market for apples to-day is found within the borders of our own country, and as time rolls on larger and larger quantities will be required to meet the demands of our home trade.



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Our second greatest apple market is found in the United Kingdom, where the product of the Canadian orchards is sold in friendly but strenuous competition with apples from the Homeland and the United States.

Other markets, some of which are only in the initial stage of development, are found in Germany and other parts of Europe, in the United States, Newfoundland, South Africa, the West Indies, Australasia, South America, &c., but for some years to come the main demand for our apples will come from the first two markets mentioned—Canada and Great Britain.

## EXTENT OF THE BRITISH MARKET.

In the last nine years there has been practically no increase in the quantity of apples imported yearly into the United Kingdom. In 1904 the total importation was 3,771,781 hundred-weights, and in 1912 it was 3,881,947 hundred-weights. It is significant, however, that in the same period the imports of bananas almost doubled, jumping from 3,910,511 bunches to 6,978,867 bunches.

The lack of increase in the apple imports was not due to an augmented home supply as, so far as I can learn, the annual production of apples in Great Britain, apart from the usual crop fluctuations, has not varied much in the eight years in question. Taking into account the increase in population it is, therefore, apparent that the per capita consumption of apples in the United Kingdom has in reality declined since 1904, seeing that the actual quantity consumed each year has remained practically the same. According to my calculation the present consumption of apples in the United Kingdom, including those for cider and all other purposes, does not exceed one-half bushel per head, a rate which is unreasonably low in view of the recognized value of the apple as a wholesome food product. If the efforts that were used to advertise and push the sale of bananas in the British Isles were employed there on behalf of the apple, I have no doubt that the consumption of the latter could be increased fourfold.

That Canada is now the chief source of supply for imported apples is shown by the fact that in the period from September 1, 1911, to April 30, 1912, out of a total importation of 2,850,000 barrels, this country furnished 1,520,387, the United States 981,130 barrels, and other countries 348,483 barrels.

If consumption in the Old Country continues at the existing level, it is not likely that the total quantity of apples imported annually will show any material increase over present figures except in years when the home crop is more or less a failure, and it is obvious, therefore, that Canada can only acquire a larger proportion of that market at the expense of her principal competitor, the United States. In this competition the only advantage possessed by the United States is the size of her crop; in all other respects this country occupies the better position. In the States the growers can hardly hope to become organized as one body to the same extent that is possible in Canada, nor are they ever likely to have the benefit of one uniform law regulating grading and packing such as is now in force in Canada. In order to take full advantage of the situation, however, a greater measure of organization among Canadian growers is required, and happily the present tendency is strongly in that direction.

## OUR DOMESTIC MARKET.

The consumption of apples in Canada also is much less than it should be. Assuming that in 1912 this country produced approximately fifteen million bushels of apples, good, bad and indifferent, and deducting from this 10 per cent for culls and waste, or say one and a half million bushels, and five million bushels for export, including fresh and dried apples, we still have eight and a half million bushels left to be marketed in Canada either in a raw state or dried, evaporated or canned. To this figure we must add 600,000 bushels to represent our imports of apples, making a



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total of 9,100,000 bushels. Divide this by our population of  $7\frac{1}{2}$  millions and we get a per capita consumption of  $1\frac{1}{4}$  bushels. If the consumption could be increased to two bushels per head, surely a reasonable estimate, it would enlarge our home market 60 per cent and offer an outlet for an additional  $5\frac{1}{2}$  million bushels. The same conditions obtain in the United States, where the quantity of apples consumed per head is probably slightly greater than in Canada.

## POSSIBILITIES OF THREE BIG MARKETS.

The combined population of the United Kingdom, the United States and Canada is 143 millions, and if the yearly consumption of apples averaged two bushels for each individual, 286 million bushels would be needed to meet their wants. Last year's apple crop in the three countries named probably did not exceed 153 million bushels at an outside estimate, and the increase in production in Canada and the United States, which is expected in the near future, would in these three markets alone be comfortably taken care of, especially as the increase in population in the three countries amounts to about one and a half million a year.

## INCREASED PRODUCTION LOOKED FOR.

And all the signs point to a large increase in the production in the next few years. In the Northwestern States and in British Columbia there is said to be about 290,000 acres under apples, which produced last year about fifteen million bushels with only 8 per cent of the trees in bearing. It is thought by some that the Northwestern States will grow forty-five million bushels in 1918, and that the total crop of Canada and the United States in that year will reach 300 million bushels. In Nova Scotia there has been a noticeable expansion in the apple growing industry of late years, and predictions are freely made of a crop of nine million bushels from that section alone within five years.

The outlook, therefore, is for a period of readjustment of conditions and probable lower prices, which will undoubtedly bear heavily on districts in both Canada and the United States where the cost of production and marketing is high owing to unsuitable soil, inflated land values, distance from markets and undesirable varieties. The grower of low grade apples, wherever located, will also feel the pinch and will be obliged to improve the quality of his product or else go out of business.

The cheering feature of the situation is that even under the present non-aggressive selling methods there is hardly a reasonable limit to the quantity of *No. 1 apples* of the more attractive varieties that can be sold. Consumers are getting more particular every year, and it is the inferior grade of apples that causes sales to drag and prices for all grades to decline. It has been said of the western apple growers that they have grasped the truth 'that two good apples are worth more than two good apples with two poor ones thrown in.' One of the principal aims of the Canadian apple grower, therefore, should be to produce as high a percentage as possible of No. 1 fruit. But after he has succeeded in growing first-class fruit the grower still has the marketing problem ahead of him, and if this is to be solved satisfactorily there must be organization among the individual growers so as to achieve intelligent distribution. Under the present haphazard methods there is uneven distribution, resulting sometimes in a dearth of apples in some markets and a glut in others. Co-operative marketing holds out the brightest hope for an amelioration of these unfortunate conditions, and the wider this movement extends over the apple growing sections of Canada the more successful it will be.



SESSIONAL PAPER No. 15a

## REPORTS OF CARGO INSPECTORS IN GREAT BRITAIN.

Following are the annual reports of the cargo inspectors employed under the direction of this Branch at Liverpool, Manchester, London, Glasgow and Bristol.

REPORT OF CHIEF CARGO INSPECTOR FOR GREAT BRITAIN (MR. A. W. GRINDLEY).

LIVERPOOL, March 31, 1913.

I have the honour to submit my report for the year ending March 31, 1913.

*General Routine of Work.*

The chief duty involved in connection with cargo inspection at this end is strict attention to the manner of stowage and discharge of cargoes so that a full report on each ship may be furnished to headquarters at Ottawa.

The cargo inspectors also make special reports referring to packing, marking, &c., in order that Canadian food products may reach the receivers in Great Britain in the best possible condition.

During the apple season the inspectors attend as many of the sales as possible, and include with their reports the prices realized for the various lots.

During the past year the work of the cargo inspectors has been carried on in a most satisfactory manner; all Canadian perishable food products having been carefully watched, and regular reports, giving specific details, have been made on the printed forms furnished, which were forwarded promptly to Ottawa.

*The Fruit Trade.*

There is a growing demand for the very best quality of apples by customers who are willing to pay the price. At present the demand for 'Fancy' grade apples is chiefly met in the United Kingdom by the western States; certain varieties from Nova Scotia, Ontario and Quebec have better quality but have the reputation of being second-rate, as they come packed in barrels or badly packed in boxes instead of being shipped in fancy box packages, the fruit packed in tiers and each apple wrapped in paper. Canadian boxed apples from British Columbia, Ontario, Quebec and Nova Scotia properly selected and packed command top prices, but the quantity arriving is so small as to be hardly noticeable.

In order to ensure success producers should form co-operative societies on proper lines. It was by means of co-operation, assisted by the government, that the agricultural resources of Denmark were revolutionized, and it is by means of co-operation, directed mainly by Sir Horace Plunkett, that Ireland is rapidly increasing her shipments to the various British markets of finest quality of butter, poultry, eggs and bacon.

The Australasian colonies have had considerable experience of the most profitable methods of marketing agricultural produce, and the general consensus of opinion is that, taking one year with another, consigning is the most profitable method. Consignments, however, should only be sent to the leading distributing ports of the United Kingdom, and care should be taken that these consignments are placed in the hands of experienced salesmen, or commission merchants, who are of good sound financial standing.

As a general rule direct shipments to provincial markets in the United Kingdom realize lower net returns than shipments sold at the leading distributing ports; if the merchants at other centres desire direct shipments the safer plan would be to let them compete for their requirements in Canada; and if Canadian producers form strong co-operative associations having control of large quantities of fine quality and reliable pack of apples, and the various kinds of agricultural produce, buyers will seek them out.



A good example of what can be accomplished by well managed agricultural co-operation is found in Denmark, where the price of Danish butter is fixed at Copenhagen instead of, as is usual, at the various wholesale markets where Danish butter is sold to the retail merchant.

*Estimated Shipments of Tasmanian Apples, Season 1913.*

Advance List of Steamers and Quantities.

Loading Date.	Steamer.	Quantity.	Probable date of arrival in London.
		Bushel Boxes.	
Feb. 14.....	Orvieto.....	7,100	March 29.
" 28 .....	Otway.....	6,674	April 12.
" 28.....	Afric. ....	35,800	" 17.
Mar. 7.....	Medina.....	43,000	" 19.
" 7.....	Melbourne.....	5,000	
" 11.....	Palma .....	55,250	May 4.
" 14.....	Otranto.....	14,580	April 26.
" 21.....	Suevic.....	48,000	May 8.
" 21.....	Adelaide .....	5,000	
" 26.....	Clan McArthur.....	41,400	May 18.
" 28.....	Osterley .....	6 528	" 10.
April 4 .....	Mongolia.....	29,100	" 17.
" 11 .....	Orama.....	8,142	" 25.
" 14.....	Wiltshire.....	50,000	May 28.
" 18.....	Persic.....	47,700	June 5.
" 21.....	Clan McEwen.....	41,130	June 8.
" 21.....	Orontes.....	8,164	" 8.
		452,568	

Later advices from Hobart give a further 69-70,000 boxes to be shipped by Holt's Line, making a total for the season of approximately 522,000 boxes, including pears.

*Peach Shipments, 1912.*

Continued wet weather and the consequent lack of sunshine in Canada during the growing season caused peaches to arrive here lacking colour and flavour, so that from a *commercial* standpoint they were not as suitable for dessert purposes as shipments made during 1911. Consignments shipped by the Dominion Department of Agriculture for exhibition purposes gave satisfaction, as they were well packed, of large size, and 'stood up' well.

Peaches, if immature or green when gathered, never attain the fine flavour of a peach properly ripened on the tree.

*Grape Shipments, 1912.*

A grape shipment, also made by the Department of Agriculture, which arrived at Liverpool October 8, 1912, per ss. *Megantic*, for exhibition at Crystal Palace, London, was ideal in every way for exhibition purposes, the style of packing being greatly admired.

*Cheese.*

The quality of Canadian cheese during the past year has been below the usual standard, and by the trade here this has been generally considered attributable to unfavourable conditions during the fall months of 1912, when the rainfall was excessive.



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*The Weights of Canadian Cheese.*

Complaints are made from time to time regarding the short weights of Canadian cheese, but no doubt the Royal Commission, appointed by the Honourable Martin Burrell, Minister of Agriculture, to investigate the weighing of cheese and butter, will make a report which will give satisfaction to both the buying and selling interests, and will place the matter of weights upon a better basis than it has been for a long period.

*Stuffed Cheese.*

There have been several cases where cheese upon being cut in retail shops have been found to contain in the centre, and placed in such a manner as to be beyond the reach of the usual cheese trier, a square piece of cheese, not worthless, but inferior to the bulk of the cheese. In each case I have transmitted full details to headquarters at Ottawa.

*Transportation of Perishable Goods.*

At the present time railway transportation is a live subject in the United Kingdom. Low open trucks with tarpaulin covers are still in common use where box trucks only should be used, and while the railway companies provide what they call refrigerator cars, they accept no responsibility for their efficient refrigeration, nor for the icing of them.

The National Fruit and Potato Associations are making energetic efforts to remedy the following grievances in regard to the transport of fruit and vegetables by rail:—

- (1) Revision of the railway classification for fruit and vegetables.
- (2) The reduction of company's risk rates on the basis of owners' risk rates, plus a reasonable addition for insurance and more reasonable conditions under owners' risk.
- (3) The removal of unreasonable delays in the carriage of perishable goods by railway companies.
- (4) A more reasonable attitude with regard to claims for loss, pilferage, damage and delay.
- (5) Provision of cheap rates (similar to excursion fares) in times of glut.
- (6) Permission from the Board of Trade before railway companies may raise rates.
- (7) The provision of a larger number of fruit trucks.

British transport authorities have to contend with an increase of carelessness on the part of the transport workers largely attributable to the labour unrest, and the disputes in the labour world have brought to the foreground the handling of goods by up-to-date mechanical appliances. It may prove that the more mechanical appliances are used at the various ports, &c., the less likely there will be dislocation of trade, not only of the port or railroad concerned, but of the United Kingdom, by lockouts or strikes.

*The Port of Liverpool.*

The port of Liverpool is under the control of the Mersey Docks and Harbour Board.

The dock estate has an area of 1,677½ acres, of which 600 acres are docks and basins. The quays are nearly 37 miles in length. Improvements regarding facilities for rapidly and cheaply handling large cargoes are continually being made. Arrangements have been made between the railway companies and the board whereby railway wagons can be placed alongside a considerable number of shipping berths and traffic transferred direct between ship and truck.



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The foreign cattle trade is dealt with at the Birkenhead Foreign Animals' wharf where accommodation is provided for about 6,000 head of cattle and 16,000 sheep, with extensive chill rooms having a capacity of 3,380 carcasses and slaughter-house accommodation for 3,400 head of cattle and 3,000 sheep per day. These extensive lairages have splendid railway connections, but owing to the continued embargo on foreign cattle they have been practically deserted, until the outbreak of 'Foot and Mouth' disease in Ireland compelled Irish cattle to be landed at the Birkenhead Foreign Animals' wharf. This arrangement, although most suitable, may only prove to be temporary owing to the rivalry between local interests in the separate municipalities of Liverpool and Birkenhead. The Dock Board, however, who have the interests of the port only to serve, may be relied upon to administer the affairs of the wharf with that object, irrespective of the rivalry of other interests. Liverpool has plenty of new and well equipped cold storage warehouses outside of but near the dock estate, and leading contractors for cartage now provide insulated covered wagons for the carriage of frozen and chilled meats, &c., between ships, cold stores and railway depots, this being a decided improvement on the old method.

There are complaints regarding delay in handling traffic at the docks owing to congestion of goods at the quays and railway depots. This congestion to a certain extent is due to the construction of some of the dock sheds, which are old-fashioned one storey buildings. There is also a lack of up-to-date mechanical appliances for the expeditious loading and discharging of large steamers, and the existing lighting arrangements are most unsatisfactory for night work when compared to what is found at some other ports.

At the north end very extensive improvements are being made by the Mersey Docks and Harbour Board. The 'Gladstone Dock' at present nearing completion is only part of a scheme costing some £3,000,000 intended to meet the demand for vessels of increasing dimensions, the intention being that this dock should accommodate (both for dry dock and wet dock purposes) vessels 1,100 feet long (this giving a margin of 200 feet beyond the length of the largest vessel now afloat), with a sill depth of 40 feet at high water. The area of the Gladstone half-tide dock is  $14\frac{3}{4}$  acres.

The Gladstone Branch No. 1 will be 13 acres, and on its quay are to be erected double storey sheds having a total area of 77,610 square yards.

The Gladstone Branch No. 2 is to be  $12\frac{1}{4}$  acres, with double storey sheds on the quays, having a total area of 56,888 square yards.

The Dock Board have several eligible sites to let on long lease for the erection thereon of warehouses, works, &c. These sites vary from 1 to 120 acres and have extensive water frontages and railway connections. It can therefore readily be seen that although Liverpool docks, as a whole, are not so thoroughly equipped throughout with the most modern appliances for handling cargoes as some of the smaller and more modern ports of the Kingdom, the Mersey Docks and Harbour Board are in a quiet but practical manner keeping well in touch with the increased requirements of the port, and if desired are prepared to meet influential bodies, such as the colonial governments, who may desire to erect or have erected for them depots for the reception, classification and distribution of all kinds of colonial produce, along the same lines as placed before the Port of London Authority and the Royal Dominions Commission last year.

#### *The Port of Manchester.*

The port of Manchester as regards age, when compared with other leading ports of the Kingdom, is only in its infancy, but owing to the go-ahead policy of the officials connected with the 'Manchester Ship Canal Company,' many of the older ports might to their own advantage make improvements along the up-to-date lines followed at this new but rapidly growing port.



## SESSIONAL PAPER No. 15a

The following is a statement of the toll-paying merchandise traffic and the receipts of the port for each of the nineteen years during which the Ship Canal has been open for traffic:—

Year.	Sea-borne Traffic.	Barge Traffic. •	Total.	Receipts.
	Tons.	Tons.	Tons.	£
1894.....	686,158	239,501	925,659	97,901
1895.....	1,087,443	271,432	1,358,875	137,474
1896.....	1,509,658	316,579	1,826,237	182,330
1897.....	1,700,479	365,336	2,065,815	204,664
1898.....	2,218,005	377,589	2,595,585	236,225
1899.....	2,429,168	348,940	2,778,108	264,775
1900.....	2,784,843	275,673	3,060,516	290,830
1901.....	2,684,833	257,560	2,942,393	309,517
1902.....	3,137,348	280,711	3,418,059	358,491
1903.....	3,554,636	292,259	3,846,895	397,026
1904.....	3,618,004	291,574	3,917,578	418,043
1905.....	3,993,110	260,244	4,253,354	449,436
1906.....	4,441,241	259,683	4,700,924	498,837
1907.....	4,927,784	282,975	5,210,759	535,585
1908.....	4,317,905	264,531	4,582,496	506,975
1909.....	4,290,765	272,036	4,563,401	534,059
1910.....	4,618,070	319,561	4,937,631	555,735
1911.....	4,894,670	323,142	5,217,812	580,841
1912.....	5,021,691	318,193	5,339,884	605,179

Printed matter inclosed with this report gives detailed information regarding the port, so I only draw your attention to the style of warehouses, several storeys high, well lighted by electric light, and equipped with modern mechanical appliances for loading or discharging cargo direct to or from railway trucks, &c., and containing a splendid refrigerated sorting chamber.

A modern grain elevator, storage capacity of 1,500,000 bushels, and a second grain elevator of the same capacity is to be completed by April, 1914.

The Manchester Dock railways are 80 miles in extent and completely intersect the dock estate, and there is a splendid equipment of hydraulic, steam and electric cranes for loading and discharging cargo direct to or from warehouses or railway trucks to or from vessels alongside quay.

The Ship Canal Company have for disposal sites for works, depots, manufactures and warehouses.

#### *Acknowledgments.*

I again take this opportunity of thanking the officials of the various Canadian Government departments and shipping companies, as well as the members of the fruit and provision trades at the British ports where Canadian cargo inspectors are located, for useful help and information and for courteous treatment during the past year.

I beg to acknowledge the kindly co-operation of Mr. M. H. Matthews, Engineering Manager of Messrs. Rownson, Drew & Clydesdale, London, in supplying me with information and photographs connected with elevator conveyors for loading and discharging cargo.

This Branch lost, by resignation, a useful member of its staff during the year, in the person of Mr. Jas. A. Findlay, who acted as cargo inspector at the port of Glasgow for a period of over six years.

A. W. GRINDLEY.



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REPORT OF THE LIVERPOOL AND MANCHESTER CARGO INSPECTOR (MR. W. CARTER).

LIVERPOOL, March 31, 1913.

I beg to submit the following report for the year 1912-13.

My reports cover the ports of Liverpool and Manchester, and during the past season the following Canadian food products have been landed at these two ports: Cheese, 498,465 boxes; bacon, 17,764 cases; eggs, 580 cases; frozen meats, 16,187 packages; frozen tripe, 3,209 bags; canned corn, 500 cases; canned apples, 12,318 cases; canned peaches, 100 cases; grapes, 84 cases; peaches, 1,903 crates; pears, 43 cases; apples, Ontario and Nova Scotian, 7,843 cases, 2,255 half barrels and 358,479 barrels; frozen poultry, 497 cases.

With the exception of frozen meats, tripe, canned apples and poultry, these figures show a big reduction compared with last season. We have had no butter, and only two small consignments of eggs.

I herewith give particulars of the various goods received, and show increase or decrease of each particular lot.

*Cheese—Decrease, 50,088 boxes.*

Though there has been some improvement in the stowing and handling of cheese this season, there is plenty of room for further improvement, for there are far too many boxes landing in rough condition. The cause of this is still the same: poor boxes, cheese badly fitted and the present day rush in landing. There was very little heated cheese this past summer, but there have been many complaints *re* cheese being cut and pilfered, and judging from those I have seen, this seems to occur as frequently at the ports of loading as here, for many of the cuts were not new. There have also been several complaints about cheese arriving without either shipper's or factory mark on them, and as consignees will not take delivery of 'No mark' cheese, these are usually sold by the shipping company at a considerable reduction.

*Eggs—Decrease, 2,986 cases.*

The two small shipments landed in good order.

*Bacon—Decrease, 11,067 cases.*

With very few exceptions this landed in good order and condition; seeing that Canadian bacon is so well liked here it is remarkable that none goes direct to Manchester.

*Frozen Meats—Increase, 2,768 packages.*

There has been a decided improvement in the packing of frozen meats. The cases have generally been good, and though many of the crates have been rather frail, they were better than last year. The contents were in very good condition, and I did not see any rejected by the port health inspectors.

*Frozen Tripe—Increase, 549 bags.*

This landed in good order and condition.

*Canned Corn and Peaches.*

These landed in good order and were in every way satisfactory.

*Canned Apples—Increase, 8,674 cases.*

With the exception of one lot that was packed in cardboard boxes, these were in good order. As I reported at the time, these cardboard boxes are not strong enough for export purposes and when broken are difficult to cooper.



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*Grapes—Increase, 84 cases*

These were of good quality, well packed and landed in splendid condition

*Peaches—Increase, 1,523 crates.*

Peaches all landed perfectly sound and were well packed, but many of them were lacking in quality, being very short of colour.

*Apples—Ontario and Nova Scotia.*

These show a decrease in arrivals of 1,491 cases and 12,183 barrels. Though Ontario shipments have not been heavy, the condition has been good generally and the grading better than usual. I have never received fewer complaints *re* over-grading than during this season. The branding and the package have also been good. Except for two brands, which regularly showed frost, there has been very little to complain about on that score. The two brands referred to were those of the Better Fruit Distributing Company and the National Land and Produce Company, and the former's apples had every appearance of having been kept at too low a temperature before shipping, for they were 'dead' and wasty on arrival.

Apples held up sound exceedingly well this season, but I am not certain that it is a wise policy to keep apples like Spies and Greenings back so late. They would probably do better if shipped earlier, and would certainly give more satisfaction. Every year about February there comes a great falling off in the demand for apples for cooking purposes, for the consumer, getting tired of apples, turns to forced rhubarb which is just coming on the market then.

There has been some improvement in the quantities of small lots of various varieties arriving this season due, no doubt, to the growing number of apple packing associations, but there are still far too many mixed lots. It would be greatly to the benefit of the Canadian shipper if some scheme could be devised to do away with most of these various lots and to put up the different varieties in lots of twenty or over.

*Nova Scotia Apples.*

This has been a very good season for Nova Scotian apples. They have been sound, well packed and, though Baldwins were rather small, of good quality. Fallawaters, Starks and G. Russets were exceptionally good. Two noticeable features about the Nova Scotia apple trade this season were the large number of No. 3's shipped and the new method of branding them, such as 'large,' 'extra large,' &c. This new style of branding No. 3's led to a lot of controversy at first, but buyers soon got used to it.

I do not think that the shipments of such large quantities of No. 3's are either good for the shipper or for the trade here. When a big percentage of them only realize 5s. 6d. to 7s. per barrel, they must lose money, besides lowering the price of No. 1's and No. 2's. Buyers like to see a certain number of No. 3's in all the straight lines for they believe then that the fruit has been well graded, but long lines of No. 3's alone tend to lower the market. Except in an exceptionally scarce season I think it would be better to utilize most of this class of fruit at home if possible.

*Re* mixed lots—the same remarks apply to Nova Scotia packers as to Ontario packers.

*Boxed Apples.*

The quality of box apples has been good, but in many cases the packing has left a lot to be desired. In some shipments the box had a layer of paper round it but no apples papered. In other shipments neither box nor apples were papered. There is no doubt that the high-class box apple trade has come to stay, and the Canadian



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packer ought to put up some fancy table fruit in the same style as those packed in Oregon. These are packed in boxes of about 40 pounds, every apple papered, the exact number of apples the box contains stamped on it (from 88 to 200), and the quality excellent. These have realized from 6s. 6d. to 9s. during the season, according to counts, and the trade is growing every year.

*Prince Edward Island Apples.*

Two small shipments from Charlottetown were received in Manchester, but they did not do very well. The quality was only fair and the packing rough, especially the boxes.

*Poultry.*

One consignment consisting of 497 cases of chickens was received and landed in good order and condition.

*Acknowledgments.*

I have again pleasure in stating that I have received every assistance and courtesy from the various steamship companies' officials.

WM. CARTER.

REPORT OF THE LONDON CARGO INSPECTOR (MR. A. E. GRIFFITH).

LONDON, March 31, 1913.

I beg to submit the following report for the period in which I have been engaged in cargo inspection work, viz., since June 23, 1912.

The dock strike was in full swing when I started, and all consignments, during a period of twelve to thirteen weeks, suffered, both by delay in discharging and by the careless handling of the inexperienced dock workers who were taken on to replace the strikers. During this period the shipments of cheese were dealt with in a very unsatisfactory manner, and the breakage of boxes and general damage to the cheese itself became very serious. The failure of the strike did not tend to improve the spirit of the men on their return to work, and as a result for some weeks goods were roughly handled despite the close supervision of the authorities.

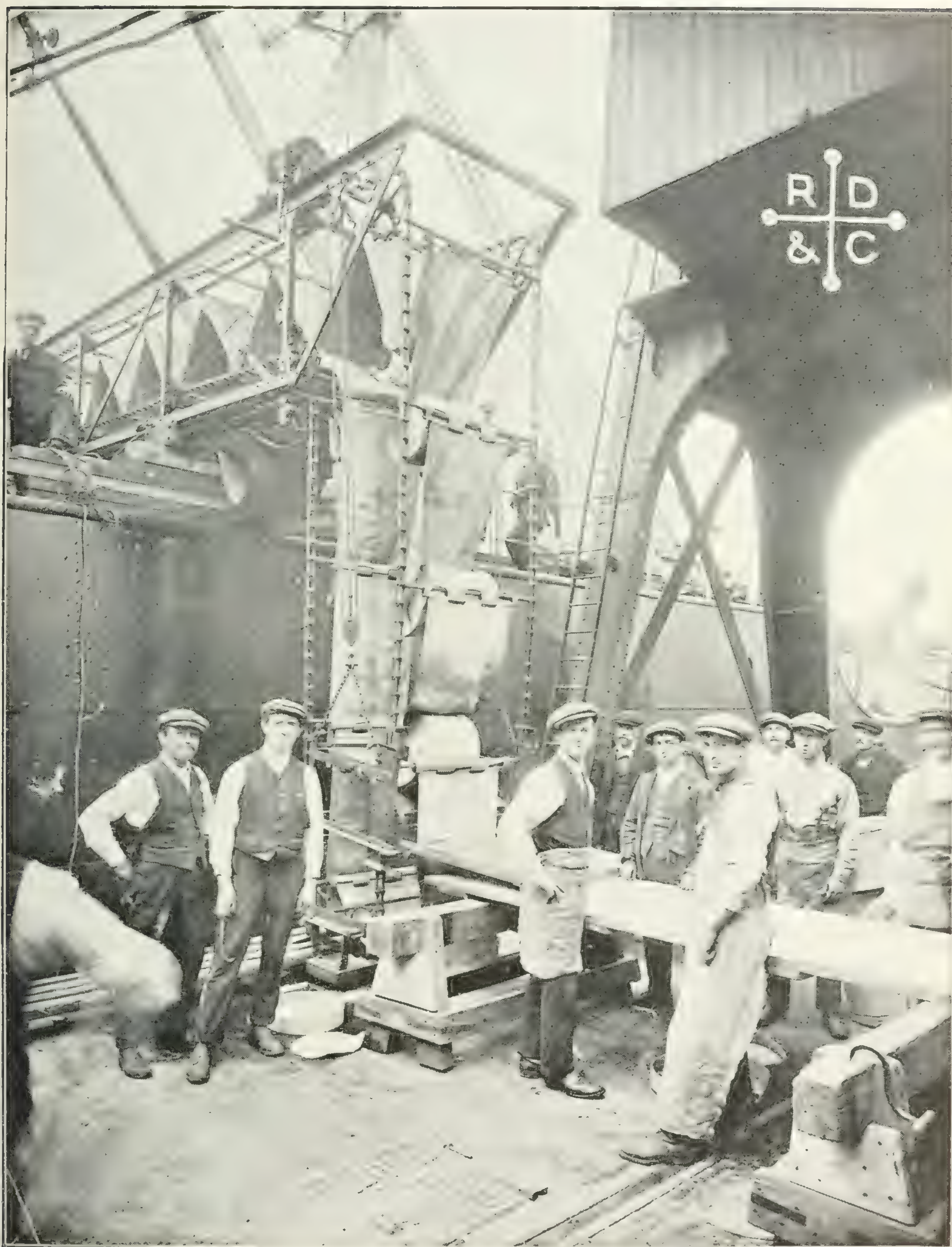
*Cheese Boxes.*

The percentage of broken boxes in cheese shipments has struck me as being unnecessarily heavy, and inquiries throughout the trade make it clear that this season it is higher than previously. The boxes from western Ontario, i.e., Ingersoll, Listowel, &c., always arrive here in the best condition, being made of stronger wood and the cheese well boxed. The fact that this is invariably the case proves the possibility of well boxed cheese being landed here in good condition. The boxes from the Province of Quebec and from the Brockville and Belleville sections are nothing like as good, and the increasing number of cut cheese arriving, apparently through pilferage on the passage, emphasizes the necessity of improving the boxing. The New Zealand crates being of heavier wood and bound with thick wire are landed almost free from breakage, and cheese cannot be damaged in any way, a fact which the trade is quick to appreciate.

*Quality of Cheese and Weights.*

The prevailing opinion here is that the cheese of the season of 1912 have been below the usual standard; that more moisture than usual has been left in the cheese, causing serious undevelopment of flavour and loss of weight, while many cheese have



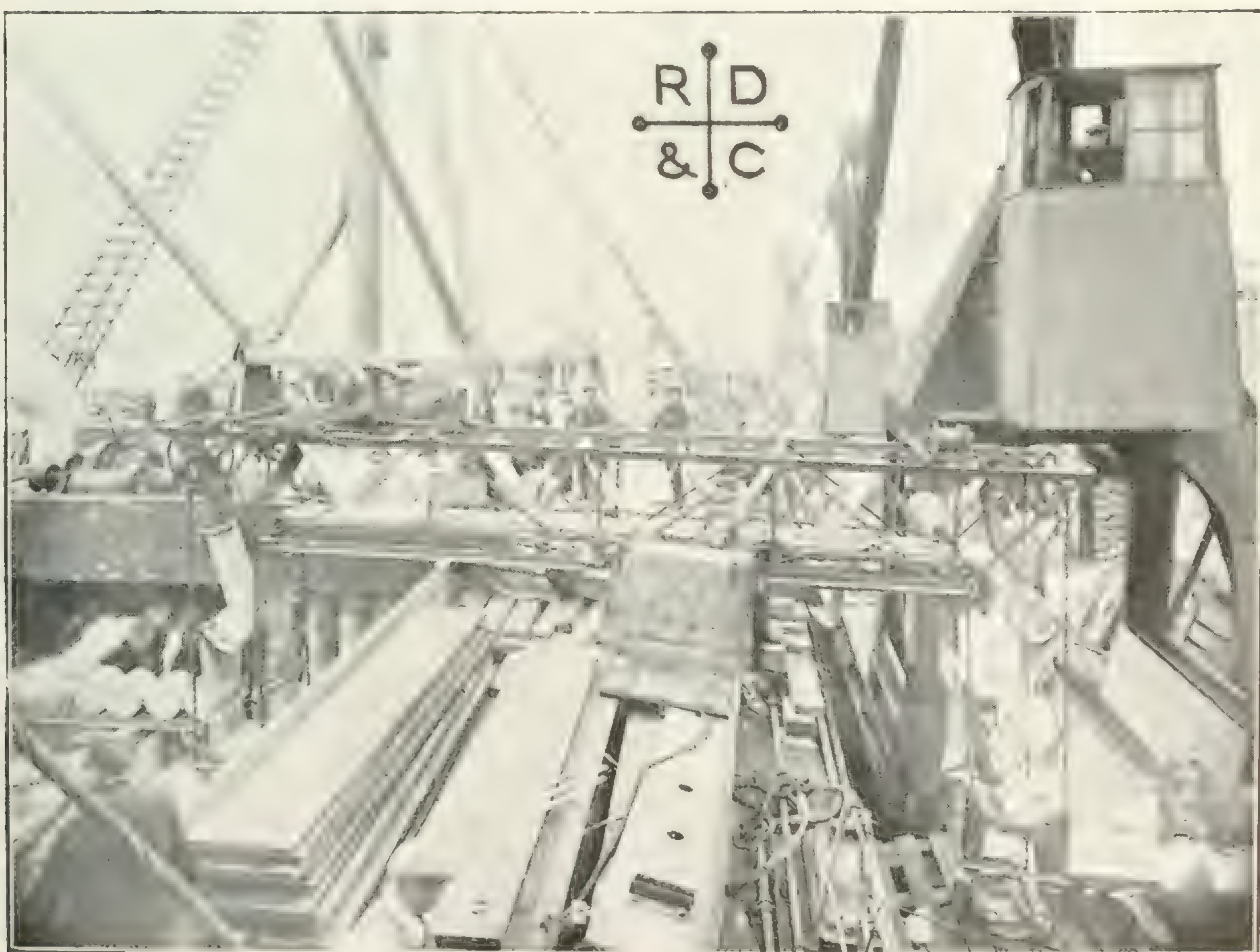
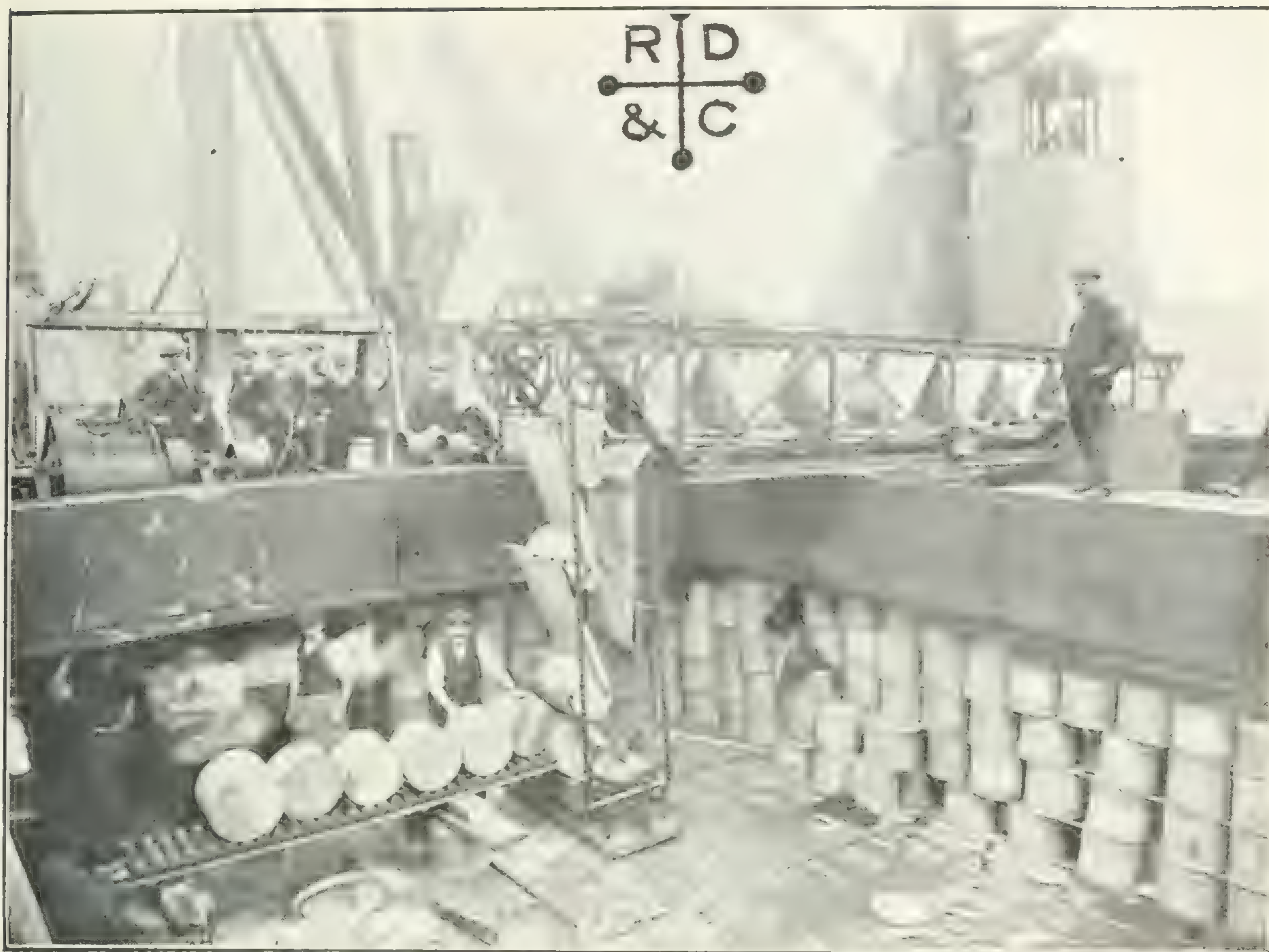


Discharging Canadian Cheese at Liverpool with a patented elevator-conveyer system.









Discharging Canadian Cheese at Liverpool with a patented elevator-conveyer system.







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been shipped from the factories too green. As a consequence, partially, prices receded in October last and have never recovered as the goods were not of the quality which people could hold and bide their time for selling. With regard to the marked weights on the boxes, there appears to be an ever growing laxity, so much so that it has formed the subject for debate on the part of the Home and Foreign Produce Exchange here, and of other representative associations.

*Stowage of Cheese and Methods of Discharge.*

I have frequently pointed out to the responsible ships' officers the necessity of stowing cheese away from hay or grain, as the worst cases of sweaty and greasy cheese have generally been associated with this cause. The proportion of cheese discharged by the elevator-conveyor has been small—26,684 out of a total of (about) 770,000, the machine only having been worked on six occasions. Although this mechanical handling is not by any means perfect, there is no doubt that it minimizes the breakage of the cheese boxes, and arrangements should certainly be made to ensure a sufficient number of cheese being placed in one hold to warrant the working of the elevator-conveyor. As some time is taken in getting the machine in position, it is hardly considered worth while unless a minimum of about 4,000 cheese can be discharged for each fixing.

*Bacon.*

Bacon has come to hand generally in good condition, and considering the weight of the packages the cases have landed free from damage. Any broken are recovered immediately on the quay sheds, but an additional iron band around the middle of these cases would be an improvement.

*Apples.*

The quality of the apples this season compares very favourably with that of previous years, and with the exception perhaps of Baldwins (which have been poor and spotty) all varieties have been good. The grading has been more severe and, as a result, the quality of No. 3's has shown an all round improvement. Of the Nova Scotia fruit the best have come from Kings and Hants counties, although some of the packing of the latter leaves room for great improvement; whilst little attention seems to have been paid to the packing by many growers in Digby and Lunenburg counties. Whilst attending the leading London apple sales during the season, I have been struck by the big margin between prices for well-packed bright fruit and poorly packed and consequently dull apples. To ensure the best prices on the London market, growers must face their barrels attractively, but honestly, and pack tightly, as only tight barrels make the full value. The acreage in England under apples is on the increase, and growers here are adopting all modern methods to market their fruit in attractive condition. The competition of the western United States to capture the apple market of London is now becoming a serious matter, and it is imperative that Canadian shippers should realize the necessity of landing their apples here tightly packed and in attractive condition and appearance.

The Furness Line appear to have given special attention to the careful handling of these barrels, and by employing the same gangs of men they succeed in delivering the fruit to consignees with less damage than those companies receiving only irregular shipments.

*Good Port Accommodation.*

The accommodation which the Port of London Authority has at its disposal for the reception and storing of all kinds of produce is of a vast area and nothing is spared to keep the whole equipment abreast of present day requirements. At the Surrey Commercial Docks, where almost the whole of the Canadian cheese and apples



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are landed, the cold storage warehouses are right alongside the quays, and all consignments are carefully and expeditiously handled.

For delivering the cheese to the merchants' vans, a kind of continuous travelling stairway is used which is very quick in delivery and helps to prevent breakage of boxes. At this dock also the grain warehouses are very extensive, and there is cold storage accommodation for the equivalent of 75,000 sheep.

Most of the frozen or chilled beef, mutton and lamb is discharged at the Royal Victoria and Albert docks, where the equipment for handling this produce is of the very latest type. All the main railway lines run right alongside the quay and the cold storage sheds can discharge produce right into the railway trucks. The accommodation here is equivalent to 552,000 sheep, and it is intended to extend to another 250,000. In discharging chilled beef a continuous band from the ship's side is met on the covered quay by an overhead runway, to which the beef is attached, and which connects either with the insulated railway covered trucks, the consignees' vans, or the cold storage sheds of the Port of London Authority. The arrangement is so well adjusted that one man can deliver six quarters, weighing from 160 to 200 pounds each, once they are attached to the runway. The cold storage machinery here has been altered from time to time to keep up to the latest improvements, and the general arrangements are such that shippers can rely upon their produce receiving the best and most expeditious treatment.

The West India dock also has large accommodation for cold storage, and whilst the machinery for handling goods is not quite so modern, everything is done to prevent delay in discharging cargoes. I find the stevedores and wharfingers fully alive to the necessity of providing machinery for loading and discharging ships, and the number of elevator-conveyors, &c., is on the increase.

I have to acknowledge the consideration and help at all times of the various officials of the Port of London Authority, and also of those connected with the shipping companies with whom I have come in contact, both at the docks and offices.

A. E. GRIFFITH.

REPORT OF THE GLASGOW CARGO INSPECTOR (MR. THOS. E. DAVIS).

GLASGOW, March 31, 1913.

I beg to present herewith my report for the year ending March 31, 1913, including a review of the progressive efforts of the department during the last decade.

*Shipping.*

For the past ten years I have had the opportunity of watching the changed methods of stowage and the general handling of imports, and it will interest many not conversant with the intricacies associated with ocean transit, to know that the improved facilities in regard to adequate ventilation, machinery for forced draught and refrigeration gives assurance for the placing of perishable commodities on the final markets in a sound condition. That this is true is borne out by the fact that the heating of cheese, &c., can now rarely be traced to bad stowage, whereas before these changes 25 per cent of the cheese landed from some vessels showed signs of heat, the result of imperfect ventilation and bad stowage, it being a common occurrence to find cheese completely covered with sacks of flour which were banked up close to the air shafts, rendering the ventilation of the hold impossible. It is, however, now pleasing to report that to-day the necessity of intelligent stowage, &c., is fully recognized by all parties, and that I have had no occasion to complain in this direction throughout the past season.



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*Progress, 1903-13.*

As cargo inspector at the port of London, 1903 to June, 1912, and at Glasgow since 1912, I purpose giving a résumé of the work, and I have pleasure in recording that the progress made, advantageous to both shipper and merchant, has been admittedly due to the influence of the department at Ottawa.

At the port of London in 1903 it was the common practice to take butter from the ships' holds in nets and to dump same on quay in the same manner as ordinary solid freight, irrespective of weather, and it was in many instances warehoused indiscriminately with odorous cargo, or placed in river craft with no protection from heat or rain.

With specific grounds for complaint I reported a case of rough handling, and on representation from Ottawa, a drastic reform was at once made at the docks. I was met in the most friendly spirit by the company's officials, and as a result butter and cheese have since been landed on flat boards, warehoused separately and to the best advantage available.

A complete record of butter temperatures was also obtained and reported, and the consignees advised of their responsibilities as regards prompt removal. Failing to clear within the reasonable period of twenty-four hours (Sunday excepted), the butter was lodged in the Dock Company's cold stores at the merchant's expense.

At this time it was also my duty to trace the source responsible for the high percentage of heated cheese, and finding stowage of boxes against unprotected engine room bulkheads the chief cause, I reported same to Ottawa, with the result that all vessels of the steamship line had the bulkheads insulated, with satisfactory results.

At the commencement of the apple season, I had to complain again in respect to badly handled barrels, which was promptly remedied, and with extra ventilating shafts and fans placed in holds, heat damage is now rarely traced to the ship. Further, as a guard against plunder, the shipping companies now place watchers and coopers in each hatch during discharge of fruit.

As regards the carrying of commodities in cold chambers, a comparison of temperatures of butter when loaded at Montreal and when landed, indicated the degree of efficiency of the ship's refrigerating plant, which was further checked by the placing of thermographs, the charts on which gave faithful temperature readings throughout the voyage.

In 1905, the principal Canadian trading steamers took berths at the Surrey Commercial dock with up-to-date equipment for landing direct to cold stores, and with the latter facilities the chain of refrigeration, the principal aim of the department, was complete.

*Glasgow.*

During the summer, the principal steamers arrive from Montreal and bring Canadian freight from Boston, Portland, Halifax and St. John during the winter. There is also an occasional service from New York.

The vessels are of first-class carrying capacity, well ventilated and equipped with cold storage plant. In the discharge of produce, the respective shipping companies control freight with the same efficiency and supervision as in London, with this advantage—cargo here is not discharged over-side to river craft, a method of transportation entailing much extra handling and possible weather damage. The railway is another advantage not available at London. The track here being laid alongside the quay, provincial consignments can be placed direct on car; but allowing for this invaluable asset, unless perishables are taken up promptly, the dock company have no cold storage to offer.

Throughout the season under review, I have furnished reports respecting the condition in which each cargo was landed, removed thermograph records, and interviewed the importers on matters affecting the products forwarded, and by attending sales, have also been able to furnish the current prices of apples *ex* each steamer.



*Dairy Produce.*

Imports of various Canadian produce show a decided falling off—not a single package of butter, and but one consignment of eggs, being placed with merchants.

Canadian bacon gave every satisfaction, as did the cheese, no complaints of mixed curd or heat damage being reported.

In the matter of cheese boxes there remains much room for improvement, the high percentage of those broken being easily traced to misfitting boxes and cheese of extra weight.

*Ontario Apples.*

The varieties from the above province have easily held first place here, buyers attending from Edinburgh, Aberdeen and other Scottish centres, also from Newcastle, England.

The required standard pack and grade of the fruit has been creditably maintained throughout the season, and there is little to say that is not favourable—although the question of colour has not altogether been favourably commented on.

*Nova Scotia Apples.*

With ten seasons of inspection work behind me, I am confident that the pack and condition of apples from Nova Scotia have not heretofore reached the present standard, especially in the selection of first grade varieties.

In a letter dealing with the season's importations from Nova Scotia, one of the large importers here makes the following points:—

‘We would like you to bring to the attention of shippers that to put the shipping mark of the goods on the bottom of the barrels *is entirely wrong*. It leads to no end of trouble on this side. Why cannot they put this shipping mark on the face end of the barrel, along with the name of the packer, the same as every other country does? To find out whether we are getting the right or the wrong article we have got to examine both ends. Now when receivers are very busy taking in huge quantities there is no time for this double work, and there is no need for the shipping mark being on the bottom end. There is plenty of room on the face end. Then you have not only the shipping mark but you have the name of the pack beside you, and the whole thing can be seen at a glance.’

In another communication from an old-established firm the following interesting historical reference to early shipments of Nova Scotia apples occurs:—

‘Our firm was about the first to receive fruit shipped from Halifax. In the days we refer to ships were built in Nova Scotia and the rigging sent out by the Blacks of Glasgow. The first shipments of fruit were dispatched to that firm, who, in turn, handed them over to us for disposal. Shortly after this a sailing vessel with 6,000 barrels arrived here with the owners on board. This cargo we stored and gradually disposed of, finding out by experience that for the varieties then prevailing (Russets and Nonpareils) London was able to obtain the best results. The grading and packing were not so well understood then as now, so that a barrel which was a little imperfect would realize better in the metropolis (where it would have immediate disposal and consumption would be effected rapidly) than in the northern markets, which were largely distributing centres. Everything is changed for the better now, and it is recognized that Liverpool and Glasgow are able to do as well and frequently very much better than the London market, surrounded as it is by districts which produce large quantities of competing English apples.’

*Peaches.*

Several shipments of peaches reached this market mainly by rail from southern ports. These were well received, and as the quality of the fruit becomes better known



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the demand is sure to increase. That imported peaches have come to stay there is no doubt, and I think it is to the interest of the growers to further the business if possible.

*Inspection and Sale Act.*

I desire to place on record that the brokers and provision merchants appreciate the action of the Dominion Government in respect to contraventions of the above Act which covers the packing and marking of apples and the manufacture of dairy produce, and are unanimous as regards the good results of the several prosecutions.

The continued efforts that have been made by the department to secure for Canadian products a high character and a popular demand on the British markets is unstintingly recognized by all concerned.

THOS. E. DAVIS.

REPORT OF THE BRISTOL CARGO INSPECTOR (MR. H. E. SHALLIS).

BRISTOL, March 31, 1913.

Herewith please find my report for the past year.

*Cheese.*

Our supplies this year have been well maintained, having received about 387,000 boxes, a slight falling off of about 3,000 boxes from the previous year. In consequence of the heavy drought of 1911 the stocks at the commencement of last season were very low, and high prices ruled for early arrivals. As the demand continued good there was no accumulation of stocks, and prices were well maintained until near the close of the season. One noticeable feature of the past year was the almost total absence of heated and green cheese, and from all sides are comments of general improvement in this respect; but at the present time the quality of Canadian cheese in the market is rather below the standard, and this is regarded as attributable to unfavourable weather conditions during the fall months when the rainfall was excessive. We have fortunately been free the past year from labour troubles, but there have been two important matters with regard to the trade that have occupied the attention of the merchants here as well as at other ports (both old complaints), viz., the differences of weights of cheese against that marked on the boxes, and also the question of cheese boxes. The question of weights is a serious one, so many instances occurring where discrepancies of from two to ten pounds show themselves between the actual weight of the cheese and that stencilled on the box, after allowing for shrinkage, and always on the losing side to the buyer. As for the boxes, there is still no general improvement in their condition and there is, therefore, nothing to add to what has so often been said about them. It is suggested that Canada should adopt a similar type of package to that from New Zealand. The New Zealand crate is very good for transport purposes, in fact could not be beaten, but for all round purposes suitable for the trade I am of the opinion that so far as Bristol is concerned the Canadian type of box is better in every way if the same could be made stronger or protected in some way from getting broken, especially now that the average cheese is heavier than a few years back.

*Butter.*

The most noticeable feature the past year is the total absence of any shipments of butter to this port; for years past Bristol has held the premier position for this import from Canada. While making allowance for the great demand for home consumption owing to the influx of population and other contingencies of the trade, it



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would be a great pity if this export from Canada was allowed to die out, for once lost it is hard to regain. Imports from New Zealand are increasing yearly, and by all reports the make is getting of better quality; also other countries are increasing their shipments. The past year the increased imports from other sources have made up for the stoppage of Canadian shipments.

A rather serious hit to the butter trade has shown itself in the increasing demand and use of margarine, and the development of this trade within the past two years has been remarkable. One of the chief reasons for this increasing use of margarine is the high price ruling for butter owing to reduced imports since the great drought of 1911, but another reason is the high merit of this substitute for butter. The following figures show the increase of imports of margarine into this country for the month of January the past three years:—

	Cwts.
1911.. . . . .	68,027
1912.. . . . .	99,477
1913.. . . . .	110,362

#### *Meats.*

We have again shown an increase with this produce, our imports being about 4,300 boxes, with very regular shipments during the year. London continues to take the greater portion, but a quantity is withheld here and distributed to the surrounding provincial towns. The Canadian meat is much approved of here for its excellent quality and an increased trade would be welcomed. During the summer months (the mild cured continental bacon does not stand the hot weather well) there was a good demand for Canadian and United States bacon, consequently prices and demand increased and very good business resulted, but this fell off towards the end of the year.

#### *Fruit.*

In the month of October we received about 800 crates of Ontario peaches—an increase over the previous year. The fruit was carried in cold storage on the steamer and arrived here in splendid condition, large in size, fleshy and of good colour. On arrival the fruit was sent direct to London, and from reports received reached the market in like condition, realizing good prices.

#### *Eggs.*

None have arrived from Canada, our supplies being from Ireland and the continent.

#### *Hay.*

Very little has come to hand, our imports being small at any time as good supplies are at hand from the surrounding counties.

#### *Apples.*

We have again had a fairly good season, our imports totalling up to about 40,000 barrels, a large quantity of which were from Nova Scotia, but owing to the loss of the ss. *Royal George* our shipments are very much less than they would have been. With two or three exceptions this season's shipments have been most satisfactory, with a general improvement all round in the grading. All kinds of varieties have come to hand, but Baldwins, Spies and Russets have been in biggest demand, and later Ben Davis. We have had an increased percentage of No. 3 grade, but this no doubt is through bringing the Nos. 1 and 2 grades up to a higher standard, so the No. 3 grade comprises not only apples of a small size but those which owing to some



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blemish could not be graded higher. Good prices have been realized from time to time, Golden Russets No. 1 fetching up to twenty-three shillings and sixpence per barrel and Baldwins and Spies up to fifteen shillings. A great portion of our shipments as usual went through to South Wales, Cardiff chiefly, while those retained at Bristol were distributed to various towns. Reports from Cardiff speak well as to the general quality. Shipments from the United Fruit Company of Nova Scotia have come along in excellent condition, well packed and carefully graded, and if they continue along the same lines as they have started they may be assured of a ready demand and good prices.

*Thermographs and Cold Storage.*

Owing to the absence of butter shipments the cold storage on the steamers was not called for except in the case of the peach shipments, but as cheese, lard, meats and such goods were chiefly stowed in these chambers they were worked at cool air temperatures, thermographs being placed in same, as well as in other parts of the ships, and all showed good working results, the temperatures being well maintained. It may be well to mention that 165,000 cubic feet have recently been added to the cold storage equipment at Avonmouth, bringing the total capacity now up to 374,000 cubic feet for the accommodation of frozen meats, provisions and other perishable goods. These stores are divided into twenty compartments and the temperatures can be regulated to any degree required. Ships arriving with frozen meat cargoes go alongside the storage and discharge direct from the ship, the carcasses being placed in large canvas slings and lifted by hydraulic cranes to the storage doors. Butter and cheese are discharged in a similar manner except that they are placed on platform slings in order to prevent breakage. A further development is the building of a large ice factory and cold storage at Bristol, which should prove of great service, for it will enable merchants to have their meat loaded direct from the ship into refrigerator cars and sent to the storage at Bristol where it will be handy for their immediate requirements.

The facilities at the port of Avonmouth for rapid handling of produce are most efficient. In the old dock there are hydraulic cranes, a large grain store with elevator capable of raising 120 tons per hour, appliances for the rapid discharge of cargoes of oil and also for the quick handling of fruit cargoes, while the new dock is well equipped with electric cranes. Both docks have railway tracks alongside the ships so goods can be loaded direct from ship into the vans if needed. Grain in bulk is discharged in the new dock by two floating elevators, each capable of raising 100 tons per hour at full pressure. These elevators are of the latest design, driven by electricity and generating their own power, they can discharge either into barges alongside or on to the shore or (both at the same time) on to a travelling belt which conveys the grain to the granary. Bristol is a big distributing centre; several ships discharge at the old port, while others discharge at Avonmouth, and the one thing most needed is more storage room for grain, the lack of which at present will have to be considered and provision made for same.

The present year should prove of great interest to Bristol owing to the Royal Agricultural Show being held during the first week of July. It is to be hoped that it will be the means of bringing together people from all parts of the world, and so show them the many advantages that Bristol can lay claim to both as a shipping port and a distributing centre for all classes of traffic.

*Acknowledgments.*

I again tender my sincere thanks to shipping companies, dock officials and merchants for their ready help and information in the interests of the Canadian trade.

HORACE E. SHALLIS.



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WHOLESALE QUOTATIONS FOR BUTTER EACH WEEK FROM APRIL 3, 1912, TO MARCH 26, 1913.

(From Boston Chamber of Commerce, "Producers' Price Current," "Daily Trade Bulletin," "Weekly Globe," "Journal of Commerce," "Free Press," Winnipeg, and "Maritime Merchant.")

		Boston.	New York.	Chicago.	Halifax.	Montreal.	Toronto.	Winnipeg.
Week.		"Extras."	"Extras."	"Extras."	"Creamery Solids."	"Creamery Solids."	"Creamery Solids."	"Creamery Solids."
1912.		Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.
April	3..	.. - 33	.. - 31½	30 - ..	.....	34½- 35	34 - 35	.....
"	10..	34 - ..	.. - 34	32 - ..	33 - 34	34½- 35	35 - 36	.....
"	17..	31 - ..	.. - 30½	31 - ..	.....	31½- 32	35 - 36	.....
"	24..	32 - ..	.. - 32½	31 - ..	33 - 34	.. - 30	32 - 33	.....
May	1..	33½- ..	.. - 35½	31 - ..	.....	.. - 28	29 - 30	30 - ..
"	8..	.. - 32	.. - 31½	29 - ..	29 - 30	26½- 27	28 - 29	30 - ..
"	15..	.. - 31	30 - 30½	28 - ..	.....	26½- 27	28 - 29	28 - ..
"	22..	.. - 28	27½- 27½	27 - ..	29 - 30	26¾- 27	25 - 27	28½- ..
"	29..	.. - 27½	26¾- 27	25 - ..	.....	27 - 27¼	25 - 26	28 - ..
June	5..	28 - ..	27¾- 28	25 - ..	28 - 29	26¼- 26½	25 - 26	28 - ..
"	12..	.. - 28½	27¾- 28	25½- ..	.....	24½- 25	25 - 26	26 - ..
"	19..	27½- ..	26½- 27	25 - ..	26 - 28	24½- 24¾	25 - 26	26 - ..
"	26..	27½- ..	27 - 27¼	25 - ..	.....	24½- 25	25 - 26	2½¼- ..
July	3..	28 - ..	27 - 27¼	25 - ..	26 - 28	25 - ..	25 - 26	.....
"	10..	28 - ..	27 - 27¼	25 - ..	.....	25½- 25¾	25 - 26	27¼- ..
"	17..	.....	27 - 27¼	25 - ..	26 - 28	25½- 26	.....	27¼- ..
"	24..	.. - 28	27 - 27¼	25 - ..	.....	26 - 26¼	.....	.....
"	31..	28 - ..	27 - 27¼	25 - ..	26 - 28	26½- 26¾	.....	28 - ..
August	7..	27½- ..	26¾- 27	25 - ..	.....	26½- 26¾	.....	27¼- ..
"	14..	.. - 27	26 - 26½	24 - ..	28 - 29	26¼- 26½	.....	28 - ..
"	21..	.. - 27	26 - 26½	24 - ..	.....	26¼- 26½	.....	29 - ..
"	28..	27 - ..	26 - 27	25 - ..	28 - 29	26¼- 26½	.....	29 - ..
Sept.	4..	28 - ..	28¼- 28½	26 - ..	.....	27 - 27¼	.....	29½- ..
"	11..	29 - ..	28¾- 29	28 - ..	.....	27 - 27¼	.....	29½- ..
"	18..	29½- ..	30½- ..	28 - ..	.....	27¼- 27½	.....	31½- ..
"	25..	.. - 30	30 - 30½	28½- ..	28 - 29	27½- 27¾	.....	31½- ..
October	2..	31 - ..	32 - ..	30 - ..	.....	27¾- 28	.....	39 - ..
"	9..	.. - 31	30¾- 31	29 - ..	29 - 30	28½- 28¾	27 - 28	.....
"	16..	31 - ..	.. - 31	29 - ..	.....	29 - 29¼	27 - 28	33 - ..
"	23..	31 - ..	31¼- 31½	29 - ..	30 - 31	29¼- 29½	28 - 29	34 - ..
"	30..	31 - ..	32 - ..	29 - ..	.....	29¾- 30¼	28 - 29	34 - ..
Nov.	6..	.. - 32	32½- 33	32 - ..	30 - 31	29¾- 30¼	28 - 29	34 - ..
"	13..	32½- ..	34 - ..	33 - ..	.....	30¼- 30½	28 - 29	34 - ..
"	20..	33½- ..	35 - ..	34 - ..	32 - ..	30½- 30½	28 - 29	34 - ..
"	27..	33½- ..	36½- 37	34½- ..	.....	30¼- 30½	29 - 30	34 - ..
Dec.	4..	34 - ..	38 - ..	34 - 35	32 - ..	30¼- 30½	29 - 30	34 - ..
"	11..	.. - 34	36½- 37	35 - 35½	.....	30¼- 30½	29 - 30	34 - ..
"	18..	.. - 34	36½- 37	34 - ..	30 - ..	.....	29 - 30	34 - ..
"	25..	34 - ..	37 - 37½	35 - ..	.....	30¼- 30½	29 - 30	34 - ..
1913.								
January	1..	34 - ..	37½- 38	35½- ..	30 - 32	30 - 30¼	29 - 30	35 - ..
"	8..	.. - 34	36 - 36½	35 - ..	.....	29¼- 29½	29 - 30	35 - ..
"	15..	.. - 34	34¾- 35	33½- ..	32 - 33	29½- 29¾	29 - 30	35 - ..
"	22..	33½- ..	33½- 34	33 - 33½	.....	29½- 29¾	29 - 30	35 - ..
"	29..	34 - ..	35½- 36	33½- ..	32 - 33	29½- 29¾	29 - 30	35 - ..
February	5..	34½- ..	36½- 37	30 - ..	.....	29 - ..	29 - 30	35 - ..
"	12..	.. - 35	36½- 37	35½- ..	32 - 33	28½- 29	29 - 30	35 - ..
"	19..	.. - 35	36 - 36½	35½- ..	.....	28½- 29	29 - 30	35 - ..
"	26..	35 - ..	35½- 36	35 - ..	30 - ..	28½- 29	29 - 30	35 - ..
March	5..	36 - ..	36½- 37	36 - ..	.....	28½- 29	29 - 30	33 - ..
"	12..	36½- ..	36½- 37	35½- 36	31 - 32	29 - 29½	29 - 30	33 - ..
"	19..	.. - 36½	35½- 36	34½- 35	.....	29½- 30	30 - 31	33 - ..
"	26..	36½- ..	.. - 37	35½- ..	31 - 32	29½- 30	30 - 31	31½- ..



## SESSIONAL PAPER No. 15a

WHOLESALE QUOTATIONS FOR CHEESE EACH WEEK FROM APRIL 3, 1912, TO MARCH 26, 1913.

(From "Boston Chamber of Commerce," "Producers' Price Current," "Daily Trade Bulletin," "Maritime Merchant," "Journal of Commerce," "Weekly Globe," "Free Press", Winnipeg.)

		Boston.	New York.	Chicago.	Halifax.	Montreal.	Toronto.	Winnipeg.
Week.		"N. Y. Twins."	Whole Milk "Fancy Coloured."	"Twins."	"Westerns."	"Westerns."	"Westerns."	"Westerns."
1912.		Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.
April	3..	19 - ..	19 - 19 $\frac{1}{4}$	18 - ..	.....	15 $\frac{1}{4}$ - 15 $\frac{1}{2}$	16 $\frac{3}{4}$ - 17	17 $\frac{3}{4}$ - 18
"	10..	19 $\frac{1}{2}$ - ..	19 $\frac{1}{2}$ - ..	17 $\frac{1}{2}$ - ..	16 $\frac{1}{2}$ - ..	.....	16 $\frac{3}{4}$ - 17	17 $\frac{3}{4}$ - 18
"	17..	19 $\frac{1}{2}$ - ..	17 $\frac{1}{2}$ - 17 $\frac{3}{4}$	15 $\frac{1}{2}$ - ..	.....	.....	16 $\frac{3}{4}$ - 17	17 $\frac{3}{4}$ - 18
"	24..	19 $\frac{1}{2}$ - ..	15 $\frac{1}{2}$ - 15 $\frac{3}{4}$	16 - ..	16 - ..	.....	17 - 17 $\frac{1}{4}$	.....
May	1..	16 - ..	15 - 15 $\frac{1}{4}$	16 - ..	.....	.....	15 $\frac{1}{2}$ - 15 $\frac{3}{4}$	17 $\frac{1}{4}$ - 18
"	8..	15 $\frac{1}{2}$ - 16	15 $\frac{1}{2}$ - ..	15 $\frac{1}{2}$ - ..	16 - ..	13 - 13 $\frac{1}{4}$	15 $\frac{1}{2}$ - 15 $\frac{3}{4}$	15 - ..
"	15..	16 - ..	.. - 16	15 $\frac{1}{2}$ - ..	.....	12 $\frac{1}{2}$ - 13	15 $\frac{1}{2}$ - 15 $\frac{3}{4}$	15 - ..
"	22..	15 $\frac{1}{2}$ - 15 $\frac{3}{4}$	15 $\frac{1}{4}$ - ..	15 - ..	15 $\frac{1}{2}$ - ..	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$	14 $\frac{1}{2}$ - 14 $\frac{3}{4}$	15 - ..
"	29..	14 $\frac{1}{4}$ - 14 $\frac{3}{4}$	14 - ..	12 $\frac{1}{2}$ - ..	.....	14 - 14 $\frac{1}{2}$	14 $\frac{1}{2}$ - 14 $\frac{3}{4}$	15 - ..
June	5..	14 - 14 $\frac{1}{4}$	13 $\frac{1}{2}$ - ..	12 $\frac{1}{2}$ - ..	15 $\frac{1}{2}$ - ..	14 $\frac{1}{4}$ - 14 $\frac{1}{2}$	14 $\frac{1}{2}$ - 14 $\frac{3}{4}$	15 - ..
"	12..	14 $\frac{1}{2}$ - ..	13 $\frac{3}{4}$ - 14	13 - ..	.....	13 $\frac{1}{2}$ - 13	14 $\frac{1}{2}$ - 14 $\frac{3}{4}$	15 - ..
"	19..	15 - ..	14 $\frac{1}{4}$ - ..	13 - ..	14 $\frac{1}{2}$ - ..	13 $\frac{1}{2}$ - 13 $\frac{1}{4}$	14 $\frac{1}{2}$ - 14 $\frac{3}{4}$	14 $\frac{1}{2}$ - ..
"	26..	15 $\frac{1}{4}$ - ..	14 $\frac{3}{4}$ - ..	14 - ..	.....	13 - 13 $\frac{1}{4}$	14 $\frac{1}{2}$ - 14 $\frac{3}{4}$	14 $\frac{1}{4}$ - ..
July	3..	15 $\frac{1}{4}$ - ..	14 $\frac{3}{4}$ - ..	14 - ..	13 $\frac{1}{2}$ - ..	12 $\frac{1}{2}$ - 13 $\frac{1}{4}$	14 $\frac{1}{2}$ - 14 $\frac{3}{4}$	.....
"	10..	.. - 15 $\frac{1}{2}$	15 - ..	14 $\frac{1}{2}$ - ..	.....	12 $\frac{1}{2}$ - 13	14 $\frac{1}{2}$ - 14 $\frac{3}{4}$	14 $\frac{1}{2}$ - ..
"	17..	.. - 16	15 - 15 $\frac{1}{4}$	14 $\frac{1}{2}$ - ..	13 $\frac{1}{2}$ - ..	12 $\frac{1}{2}$ - 13	14 $\frac{1}{2}$ - 14 $\frac{3}{4}$	14 $\frac{1}{2}$ - ..
"	24..	15 $\frac{1}{4}$ - 16	15 - 15 $\frac{1}{4}$	13 $\frac{1}{2}$ - ..	.....	12 $\frac{1}{2}$ - 12 $\frac{1}{4}$	14 $\frac{1}{2}$ - 14 $\frac{3}{4}$	.....
"	31..	15 $\frac{1}{4}$ - 16	15 - 15 $\frac{1}{4}$	13 $\frac{1}{2}$ - ..	14 - ..	12 $\frac{1}{2}$ - 13	14 $\frac{1}{2}$ - 14 $\frac{3}{4}$	14 $\frac{1}{2}$ - ..
Aug.	7..	.. - 16	.. - 15 $\frac{1}{4}$	13 $\frac{1}{2}$ - 14	.....	13 - 13 $\frac{1}{4}$	14 $\frac{1}{2}$ - 14 $\frac{3}{4}$	15 $\frac{1}{2}$ - 15 $\frac{3}{4}$
"	14..	16 $\frac{1}{4}$ - ..	15 $\frac{3}{4}$ - ..	13 $\frac{1}{2}$ - 14	14 $\frac{1}{2}$ - 15	13 - 13 $\frac{1}{4}$	14 $\frac{1}{2}$ - 14 $\frac{3}{4}$	15 $\frac{1}{2}$ - 15 $\frac{3}{4}$
"	21..	16 $\frac{1}{2}$ - ..	15 $\frac{3}{4}$ - ..	13 $\frac{1}{2}$ - 14	.....	13 $\frac{1}{2}$ - 13 $\frac{1}{4}$	14 $\frac{1}{2}$ - 14 $\frac{3}{4}$	15 $\frac{1}{2}$ - 15 $\frac{3}{4}$
"	28..	16 $\frac{1}{4}$ - 16 $\frac{1}{2}$	.. - 16	13 $\frac{1}{2}$ - 14	14 $\frac{1}{2}$ - 15	13 $\frac{1}{2}$ - 13 $\frac{1}{4}$	14 $\frac{1}{2}$ - 14 $\frac{3}{4}$	15 $\frac{1}{2}$ - 15 $\frac{3}{4}$
Sept.	4..	16 $\frac{1}{4}$ - 16 $\frac{1}{2}$	15 $\frac{3}{4}$ - ..	13 $\frac{1}{2}$ - 14	.....	14 $\frac{1}{2}$ - 14 $\frac{1}{4}$	14 $\frac{1}{2}$ - 14 $\frac{3}{4}$	15 $\frac{1}{2}$ - 15 $\frac{3}{4}$
"	11..	16 - 16 $\frac{1}{4}$	15 $\frac{1}{2}$ - 15 $\frac{3}{4}$	14 - ..	.....	14 $\frac{1}{2}$ - 14 $\frac{1}{4}$	.....	15 $\frac{1}{2}$ - 15 $\frac{3}{4}$
"	18..	16 - ..	15 $\frac{1}{2}$ - ..	14 - ..	.....	13 $\frac{1}{2}$ - 13	14 $\frac{1}{2}$ - 15	15 $\frac{1}{2}$ - 15 $\frac{3}{4}$
"	25..	16 $\frac{1}{4}$ - ..	16 - 16 $\frac{1}{4}$	14 - ..	14 $\frac{1}{2}$ - 15	13 $\frac{1}{2}$ - 13	14 $\frac{1}{2}$ - 15	15 $\frac{1}{2}$ - 15 $\frac{3}{4}$
October	2..	17 - ..	16 $\frac{3}{4}$ - ..	14 $\frac{1}{2}$ - 15	.....	13 $\frac{1}{2}$ - 13 $\frac{1}{4}$	14 $\frac{1}{2}$ - 15	15 $\frac{1}{2}$ - 15 $\frac{3}{4}$
"	9..	17 $\frac{1}{2}$ - ..	17 $\frac{1}{4}$ - ..	15 $\frac{1}{2}$ - 16	14 $\frac{1}{2}$ - 15	13 $\frac{1}{2}$ - 13 $\frac{1}{4}$	14 $\frac{1}{2}$ - 15	.....
"	16..	17 $\frac{1}{2}$ - 18	17 $\frac{1}{2}$ - ..	15 $\frac{1}{2}$ - 16	14 $\frac{1}{2}$ - 15	13 $\frac{1}{2}$ - 13	14 $\frac{1}{2}$ - ..	14 $\frac{1}{2}$ - 15 $\frac{3}{4}$
"	23..	17 $\frac{1}{2}$ - 18	17 $\frac{1}{2}$ - ..	15 $\frac{1}{2}$ - 16	.....	13 $\frac{1}{2}$ - 13 $\frac{1}{4}$	14 $\frac{1}{2}$ - ..	14 $\frac{1}{2}$ - 15 $\frac{3}{4}$
"	30..	17 $\frac{1}{2}$ - 18	17 $\frac{1}{4}$ - 17 $\frac{1}{2}$	15 $\frac{1}{2}$ - 16	.....	13 $\frac{1}{2}$ - 13 $\frac{1}{4}$	14 $\frac{1}{2}$ - ..	14 $\frac{1}{2}$ - 15 $\frac{3}{4}$
November	6..	17 $\frac{1}{2}$ - 18	17 $\frac{1}{4}$ - 17 $\frac{1}{2}$	15 $\frac{1}{2}$ - 16	14 $\frac{1}{2}$ - 15	12 $\frac{3}{4}$ - 12 $\frac{3}{4}$	14 $\frac{1}{2}$ - ..	14 $\frac{1}{2}$ - 15 $\frac{3}{4}$
"	13..	.. - 18	17 $\frac{1}{4}$ - 17 $\frac{1}{2}$	15 $\frac{1}{2}$ - 16	.....	12 $\frac{3}{4}$ - 12 $\frac{3}{4}$	14 $\frac{1}{2}$ - ..	14 $\frac{1}{2}$ - 15 $\frac{3}{4}$
"	20..	.. - 18	17 $\frac{1}{4}$ - 17 $\frac{1}{2}$	15 $\frac{1}{2}$ - 16	14 $\frac{1}{2}$ - 15	12 $\frac{3}{4}$ - 12 $\frac{3}{4}$	14 $\frac{1}{2}$ - ..	14 $\frac{1}{2}$ - 15 $\frac{3}{4}$
"	27..	.. - 18	17 $\frac{1}{4}$ - 17 $\frac{1}{2}$	14 $\frac{1}{2}$ - 15	.....	12 $\frac{3}{4}$ - 13 $\frac{1}{4}$	14 $\frac{1}{2}$ - ..	14 $\frac{1}{2}$ - 15 $\frac{3}{4}$
December	4..	.. - 18	17 $\frac{1}{2}$ - ..	15 - ..	14 $\frac{1}{2}$ - 15	12 $\frac{3}{4}$ - 12 $\frac{3}{4}$	14 $\frac{1}{2}$ - ..	14 $\frac{1}{2}$ - 15 $\frac{3}{4}$
"	11..	.. - 18	17 $\frac{1}{2}$ - 17 $\frac{3}{4}$	15 - ..	.....	12 $\frac{3}{4}$ - 12 $\frac{3}{4}$	14 $\frac{1}{2}$ - ..	14 $\frac{1}{2}$ - 15 $\frac{3}{4}$
"	18..	.. - 18	17 $\frac{1}{2}$ - 17 $\frac{3}{4}$	15 - ..	15 $\frac{1}{2}$ - ..	.....	14 $\frac{1}{2}$ - ..	15 $\frac{1}{2}$ - 15 $\frac{3}{4}$
"	25..	.. - 18	17 $\frac{1}{2}$ - 17 $\frac{3}{4}$	15 $\frac{1}{2}$ - 16	.....	12 $\frac{3}{4}$ - 12 $\frac{3}{4}$	14 $\frac{1}{2}$ - ..	14 $\frac{1}{2}$ - 15 $\frac{3}{4}$
1913.								
January	2..	.. - 18	17 $\frac{1}{2}$ - 17 $\frac{3}{4}$	15 $\frac{1}{2}$ - 16	14 $\frac{1}{2}$ - 15	12 $\frac{1}{2}$ - 12 $\frac{3}{4}$	14 $\frac{1}{2}$ - ..	14 $\frac{1}{2}$ - 15 $\frac{3}{4}$
"	8..	.. - 18	17 $\frac{1}{2}$ - 17 $\frac{3}{4}$	15 $\frac{1}{2}$ - 16	.....	12 $\frac{1}{2}$ - 12 $\frac{3}{4}$	14 $\frac{1}{2}$ - ..	14 $\frac{1}{2}$ - 15 $\frac{3}{4}$
"	15..	.. - 18	17 $\frac{1}{4}$ - 17 $\frac{1}{2}$	15 $\frac{1}{2}$ - 16	14 $\frac{1}{4}$ - 15	12 $\frac{1}{2}$ - 12 $\frac{3}{4}$	14 $\frac{1}{2}$ - 15	14 $\frac{1}{2}$ - 15 $\frac{3}{4}$
"	22..	17 $\frac{1}{2}$ - 18	17 - 17 $\frac{1}{2}$	15 $\frac{1}{2}$ - 16	.....	12 $\frac{1}{2}$ - 12 $\frac{3}{4}$	14 $\frac{1}{2}$ - 15	14 $\frac{1}{2}$ - 15 $\frac{3}{4}$
"	29..	17 $\frac{1}{2}$ - 18	16 $\frac{1}{2}$ - 17 $\frac{1}{4}$	15 $\frac{1}{2}$ - 16	14 $\frac{1}{2}$ - 15	12 $\frac{1}{2}$ - 12 $\frac{3}{4}$	14 $\frac{1}{2}$ - ..	15 $\frac{1}{4}$ - 15 $\frac{1}{2}$
February	5..	17 $\frac{1}{2}$ - 18	17 $\frac{1}{2}$ - 18	16 - 16 $\frac{1}{2}$	.....	12 $\frac{1}{4}$ - 12 $\frac{1}{2}$	14 $\frac{1}{2}$ - ..	15 - 15 $\frac{1}{2}$
"	12..	17 $\frac{1}{2}$ - 18	16 $\frac{1}{2}$ - 17	16 - 16 $\frac{1}{2}$	14 $\frac{1}{2}$ - 15	.....	14 $\frac{1}{2}$ - ..	15 - 15 $\frac{1}{2}$
"	19..	17 $\frac{1}{2}$ - 18	16 $\frac{1}{2}$ - 17	16 - 16 $\frac{1}{2}$	.....	12 $\frac{1}{4}$ - 12 $\frac{1}{2}$	14 $\frac{1}{2}$ - ..	15 - 15 $\frac{1}{2}$
"	26..	17 $\frac{1}{2}$ - 18	17 - 17 $\frac{1}{4}$	16 - 16 $\frac{1}{2}$	14 $\frac{1}{2}$ - 15	12 $\frac{1}{4}$ - 12 $\frac{1}{2}$	14 $\frac{1}{2}$ - ..	15 - 15 $\frac{1}{2}$
March	5..	17 $\frac{1}{2}$ - 18	17 - 17 $\frac{1}{4}$	16 - ..	.....	12 $\frac{1}{4}$ - 12 $\frac{1}{2}$	14 $\frac{1}{2}$ - ..	14 $\frac{1}{2}$ - 15
"	12..	17 $\frac{1}{2}$ - 18	16 $\frac{1}{2}$ - 17 $\frac{1}{4}$	14 $\frac{1}{2}$ - 15	14 $\frac{1}{4}$ - 15	12 $\frac{1}{4}$ - 12 $\frac{1}{2}$	14 $\frac{1}{2}$ - ..	14 $\frac{1}{2}$ - 15
"	19..	17 $\frac{1}{2}$ - 18	16 $\frac{1}{2}$ - 17	13 $\frac{1}{2}$ - 14	.....	12 $\frac{1}{4}$ - 12 $\frac{1}{2}$	14 $\frac{1}{2}$ - ..	14 $\frac{1}{2}$ - 15
"	26..	17 - 17 $\frac{1}{2}$	16 - 16 $\frac{3}{4}$	13 - ..	14 $\frac{1}{2}$ - 15	12 $\frac{1}{4}$ - 12 $\frac{1}{2}$	14 $\frac{1}{2}$ - ..	14 $\frac{1}{2}$ - 15



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WHOLESALE QUOTATIONS FOR EGGS EACH WEEK FROM APRIL 3, 1912, TO MARCH 26, 1913.

(From "Boston Chamber of Commerce," "Producers' Price Current," "Daily Trade Bulletin," "Maritime Merchant," "Journal of Commerce," Weekly Globe," "Free Press," Winnipeg.)

Week.	Boston.		New York.		Chicago.		Halifax.		Montreal.		Toronto.		Winnipeg.	
	"Western Firsts."		"Firsts" Fresh Gathered.		"Firsts."		"Fresh."		"New Laid."		"Fresh."		"Fresh."	
1912.	Cts.		Cts.		Cts.		Cts.		Cts.		Cts.		Cts.	
April 3....	21½	22	21½	22	19½	..	..	..	25	26	24	25	22	23
" 10....	22	..	22	..	19½	..	22	23	25	26	22	23	19	..
" 17....	..	21	21	21½	19	..	..	..	23	23½	..	..	19	..
" 24....	..	21	21	22	18½	..	22	..	23	23½	..	..	..	..
May 1....	20	20½	20½	21½	18	..	..	..	23	23½	22	23	21	..
" 8....	20	20½	20½	21½	18	..	22	..	23	23½	22	23	21	..
" 15....	20	..	20½	21	18	..	..	..	23	23½	22	23	21	..
" 22....	19½	..	20	20½	17½	18	21	..	23	23½	22	23	21	..
" 29....	19	..	18	19	17	..	..	..	22½	23	22	23	20	..
June 5....	19	..	18½	19	17	17½	21	..	22½	23	22	23	19	..
" 12....	19	..	18½	19	17	17½	..	..	22	..	22	23	19	..
" 19....	19	..	18½	19	17½	..	22	..	22	..	21	22	19	..
" 26....	19	..	19	19½	18	..	..	..	22	..	21	22	19	..
July 3....	19	20	19½	20	17	..	22	..	22	..	21	22	..	..
" 10....	20	..	19½	20	17½	..	..	..	22	..	21	22	19	..
" 17....	20½	21	19	20	17½	..	23	..	25	..	21	22	19	..
" 24....	19	20	18½	19½	18	..	..	..	25	..	22	23	..	..
" 31....	19	20	18½	19½	18	..	24	..	22	..	22	23	22½	..
Aug. 7....	20	21	20	21	18	..	..	..	23	..	22	23	21	..
" 14....	20½	21	21	21½	18½	..	27	..	23	..	22	23	23	..
" 21....	21	21½	21	22	19	..	..	..	23	..	23	24	24	..
" 28....	22	..	21½	22½	20	..	27	28	23	..	23	24	25	..
Sept. 4....	22½	23	22	23	20	..	..	..	23	..	23	24	25	..
" 11....	24	..	23½	24½	21	..	..	..	23	..	..	..	25	..
" 18....	24	25	24	25	21½	..	..	..	25½	..	23	24	25	..
" 25....	25	26	24	26	22½	..	27	28	25½	..	24	26	25	..
Oct. 2....	26	28	25	27	23	..	..	..	25½	..	24	26	25	..
" 9....	26	28	25	27	24	..	28	30	25½	..	25	27	..	..
" 16....	26	28	24½	27	24	..	..	..	25½	..	25	27	26	..
" 23....	26	28	25	28	24	..	29	30	27	28	25	27	27	..
" 30....	26	28	25	29	24½	..	..	..	27	..	26	28	27	..
Nov. 6....	26	28	27	31	26	..	30	31	27	..	26	28	27	..
" 13....	30	32	29	33	27	..	..	..	27	..	30	31	27	..
" 20....	30	32	29	33	27	..	30	31	27	..	30	31	27	..
" 27....	30	32	29	33	27	..	..	..	27	..	30	31	27	..
										No. 1 Cold Storage.				
Dec. 4....	32	34	30	34	27	27½	30	31	27	28	30	31	26	..
" 11....	28	..	26	28	24	..	..	..	28	..	30	31	26	..
" 18....	28	..	29	32	23	23½	30	..	..	..	30	31	28	..
" 25....	28	..	27	28	24½	25	..	..	28	..	30	31	28	..
1913.														
Jan. 1....	25	26	24	25	23½	24	30	31	28	..	31	35	28	..
" 8....	24	25	27	28	25½	26	..	..	28	..	30	32	28	..
" 15....	25	26	24	25	23½	23¾	31	..	24	25	29	31	28	..
" 22....	24	25	24	25	22½	22¾	..	..	23	24	27	28	26	..
" 29....	..	26	23	24	22¾	..	31	..	23	24	25	26	26	..
Feb. 5....	26	27	25	25½	24¾	..	..	..	17	..	22	23	25	..
" 12....	26	..	23	24	21	..	30	..	21	22	22	23	26	..
" 19....	21	..	19½	20	18½	..	..	..	20	21	22	23	26	..
" 26....	21	22	21	21½	17½	18	28	..	18	20	22	..	26	..
March 5....	..	21	20½	21	18	..	..	..	16	18	22	..	26	..
" 12....	19	19½	18½	19	18	..	25	..	16	18	22	..	22	..
" 19....	19	19½	18½	18¾	17½	17½	..	..	16	17	20	..	22	..
" 26....	19½	..	18½	18¾	17	..	24	..	16	17	..	..	22	..



SESSIONAL PAPER No. 15a

WHOLESALE QUOTATIONS FOR BREAKFAST BACON EACH WEEK FROM APRIL 3, 1912, TO MARCH 26, 1913.

(From "Canadian Farm," "Journal of Commerce," "National Provisioner" and "The London Grocer.")

Week.	Toronto.	Montreal.	Chicago.	New York.	London, Eng.
	Breakfast Bacon.	Breakfast Bacon.	Breakfast Bacon.	Breakfast Bacon.	Canadian Bacon Leanest (Landed).
1912.	Cts.	Cts.	Cts.	Cts.	Cts.
April 3.....	15 - 17 <sup>1</sup> / <sub>2</sub>	14 <sup>1</sup> / <sub>2</sub> - ..	14 <sup>1</sup> / <sub>2</sub> - ..	14 - 15	12.0 - 13 0
" 10.....	15 - 17 <sup>1</sup> / <sub>2</sub>	14 <sup>1</sup> / <sub>2</sub> - ..	14 <sup>1</sup> / <sub>2</sub> - ..	14 - 15	13.0 - 13 6
" 17.....	15 - 17 <sup>1</sup> / <sub>2</sub>	16 <sup>1</sup> / <sub>2</sub> - ..	14 <sup>1</sup> / <sub>2</sub> - ..	14 - 15	14.1 - 14 5
" 24.....	15 - 17 <sup>1</sup> / <sub>2</sub>	16 <sup>1</sup> / <sub>2</sub> - ..	14 <sup>1</sup> / <sub>2</sub> - ..	14 <sup>1</sup> / <sub>2</sub> - 15 <sup>1</sup> / <sub>2</sub>	14.3 - 14 5
May 1.....	15 - 17 <sup>1</sup> / <sub>2</sub>	17 - ..	14 <sup>1</sup> / <sub>2</sub> - ..	14 <sup>1</sup> / <sub>2</sub> - 15 <sup>1</sup> / <sub>2</sub>	14.5 - 14 9
" 8.....	15 - 17 <sup>1</sup> / <sub>2</sub>	17 - ..	14 <sup>1</sup> / <sub>2</sub> - ..	14 <sup>1</sup> / <sub>2</sub> - 16	15 2 - 15 6
" 15.....	15 - 17 <sup>1</sup> / <sub>2</sub>	17 - ..	14 <sup>1</sup> / <sub>2</sub> - ..	15 - 16	14.7 - 15 2
" 22.....	15 - 17 <sup>1</sup> / <sub>2</sub>	17 - ..	14 <sup>1</sup> / <sub>2</sub> - ..	15 - 16	14 7 - 15 2
" 29.....	18 - 18 <sup>1</sup> / <sub>2</sub>	17 - ..	15 - ..	15 - 16	14 5 - 15 2
June 5.....	18 - 18 <sup>1</sup> / <sub>2</sub>	17 - ..	15 - ..	15 - 16	14 3 - 15 2
" 12.....	18 - 18 <sup>1</sup> / <sub>2</sub>	17 - ..	15 - ..	15 - 16	14 3 - 15 2
" 19.....	18 - 18 <sup>1</sup> / <sub>2</sub>	17 - ..	15 - ..	15 - 16	14 1 - 15 2
" 26.....	18 - 18 <sup>1</sup> / <sub>2</sub>	18 - ..	15 - ..	15 - 16	14.1 - 15.2
July 3.....	18 - 18 <sup>1</sup> / <sub>2</sub>	18 - ..	15 - ..	15 - 16	13 9 - 14 5
" 10.....	18 - 18 <sup>1</sup> / <sub>2</sub>	17 <sup>1</sup> / <sub>2</sub> - ..	15 - ..	15 - 16	14 1 - 15 2
" 17.....	18 - 18 <sup>1</sup> / <sub>2</sub>	17 <sup>1</sup> / <sub>2</sub> - ..	15 - ..	15 - 16	14 1 - 15 2
" 24.....	18 - 18 <sup>1</sup> / <sub>2</sub>	17 <sup>1</sup> / <sub>2</sub> - ..	15 - ..	15 - 16	14 9 - 15 2
" 31.....	18 - 18 <sup>1</sup> / <sub>2</sub>	17 <sup>1</sup> / <sub>2</sub> - ..	15 - ..	15 - 16	14 9 - 15 4
Aug. 7.....	18 - 18 <sup>1</sup> / <sub>2</sub>	17 <sup>1</sup> / <sub>2</sub> - ..	15 - ..	16 - 17	15 9 - 16 2
" 14.....	18 - 18 <sup>1</sup> / <sub>2</sub>	17 <sup>1</sup> / <sub>2</sub> - ..	15 - ..	16 - 17	16.0 - 16.2
" 21.....	18 - 18 <sup>1</sup> / <sub>2</sub>	17 <sup>1</sup> / <sub>2</sub> - ..	15 - ..	16 - 17	15.9 - 16.2
" 28.....	18 - 18 <sup>1</sup> / <sub>2</sub>	18 - ..	18 <sup>1</sup> / <sub>2</sub> - ..	16 - 17	15.2 - 16.2
Sept. 4.....	18 - 18 <sup>1</sup> / <sub>2</sub>	18 - ..	18 <sup>1</sup> / <sub>2</sub> - ..	16 <sup>1</sup> / <sub>2</sub> - 17 <sup>1</sup> / <sub>2</sub>	14.7 - 15.6
" 11.....	18 - 18 <sup>1</sup> / <sub>2</sub>	18 - ..	18 <sup>1</sup> / <sub>2</sub> - 19 <sup>1</sup> / <sub>2</sub>	16 <sup>1</sup> / <sub>2</sub> - 17 <sup>1</sup> / <sub>2</sub>	15.2 - 15.6
" 18.....	18 - 18 <sup>1</sup> / <sub>2</sub>	18 - ..	18 <sup>1</sup> / <sub>2</sub> - 19 <sup>1</sup> / <sub>2</sub>	16 <sup>1</sup> / <sub>2</sub> - 17 <sup>1</sup> / <sub>2</sub>	15.9 - 16.2
" 25.....	18 - 18 <sup>1</sup> / <sub>2</sub>	18 - ..	18 <sup>1</sup> / <sub>2</sub> - 19 <sup>1</sup> / <sub>2</sub>	16 <sup>1</sup> / <sub>2</sub> - 17 <sup>1</sup> / <sub>2</sub>	15.6 - 16.2
Oct. 2.....	18 - 18 <sup>1</sup> / <sub>2</sub>	18 - ..	18 <sup>1</sup> / <sub>2</sub> - 19 <sup>1</sup> / <sub>2</sub>	16 <sup>1</sup> / <sub>2</sub> - 17 <sup>1</sup> / <sub>2</sub>	15.6 - 16.2
" 9.....	18 - 18 <sup>1</sup> / <sub>2</sub>	18 - ..	18 <sup>1</sup> / <sub>2</sub> - 19 <sup>1</sup> / <sub>2</sub>	17 - 18 <sup>1</sup> / <sub>2</sub>	16.0 - 16.2
" 16.....	18 - 18 <sup>1</sup> / <sub>2</sub>	18 - ..	20 <sup>1</sup> / <sub>2</sub> - ..	17 - 18 <sup>1</sup> / <sub>2</sub>	16 7 - 16 9
" 23.....	18 - 18 <sup>1</sup> / <sub>2</sub>	18 - ..	20 <sup>1</sup> / <sub>2</sub> - ..	17 - 18 <sup>1</sup> / <sub>2</sub>	16.0 - 16.2
" 30.....	18 <sup>1</sup> / <sub>2</sub> - 19	19 - ..	20 <sup>1</sup> / <sub>2</sub> - ..	17 - 18 <sup>1</sup> / <sub>2</sub>	14.7 - 15.2
Nov. 6.....	18 <sup>1</sup> / <sub>2</sub> - 19	19 - ..	20 <sup>1</sup> / <sub>2</sub> - ..	17 - 18 <sup>1</sup> / <sub>2</sub>	14 7 - 15 2
" 13.....	18 <sup>1</sup> / <sub>2</sub> - 19	19 - ..	18 <sup>1</sup> / <sub>2</sub> - ..	17 - 18 <sup>1</sup> / <sub>2</sub>	14.7 - 15.2
" 20.....	18 <sup>1</sup> / <sub>2</sub> - 19	19 - ..	18 <sup>1</sup> / <sub>2</sub> - ..	16 - 18	14.7 - 15.2
" 27.....	17 <sup>1</sup> / <sub>2</sub> - 18	19 - ..	18 <sup>1</sup> / <sub>2</sub> - ..	16 - 17 <sup>1</sup> / <sub>2</sub>	14.1 - 14.5
Dec. 4.....	17 <sup>1</sup> / <sub>2</sub> - 18	19 - ..	18 <sup>1</sup> / <sub>2</sub> - ..	16 - 17 <sup>1</sup> / <sub>2</sub>	14 1 - 14 5
" 11.....	17 <sup>1</sup> / <sub>2</sub> - 18	19 - ..	18 <sup>1</sup> / <sub>2</sub> - ..	16 - 17 <sup>1</sup> / <sub>2</sub>	14.3 - 14.5
" 18.....	17 <sup>1</sup> / <sub>2</sub> - 18	19 - ..	18 <sup>1</sup> / <sub>2</sub> - ..	16 - 17 <sup>1</sup> / <sub>2</sub>	14.3 - 14.5
" 25.....	17 <sup>1</sup> / <sub>2</sub> - 18	19 - ..	18 - ..	16 - 17 <sup>1</sup> / <sub>2</sub>	14.7 - 15.2
1913.					
Jan. 1.....	17 <sup>1</sup> / <sub>2</sub> - 18	19 - ..	17 - 17	15 <sup>1</sup> / <sub>2</sub> - 17	14.7 - 15.2
" 8.....	17 <sup>1</sup> / <sub>2</sub> - 18	19 - ..	17 - 17	15 <sup>1</sup> / <sub>2</sub> - 17	14.7 - 15.2
" 15.....	17 <sup>1</sup> / <sub>2</sub> - 18	19 - ..	17 - 17	15 <sup>1</sup> / <sub>2</sub> - 16	14.9 - 15.2
" 22.....	17 <sup>1</sup> / <sub>2</sub> - 18	19 - ..	17 - 17	15 <sup>1</sup> / <sub>2</sub> - 16	15.3 - 15.6
" 29.....	17 <sup>1</sup> / <sub>2</sub> - 18	19 - ..	17 - 17 <sup>1</sup> / <sub>2</sub>	16 - 16 <sup>1</sup> / <sub>2</sub>	15.9 - 16.2
Feb. 5.....	17 <sup>1</sup> / <sub>2</sub> - 18	19 - ..	17 - 17 <sup>1</sup> / <sub>2</sub>	16 - 16 <sup>1</sup> / <sub>2</sub>	15.9 - 16 2
" 12.....	18 <sup>1</sup> / <sub>2</sub> - 19	19 - ..	17 - 17 <sup>1</sup> / <sub>2</sub>	16 - 16 <sup>1</sup> / <sub>2</sub>	15.2 - 15 6
" 19.....	18 <sup>1</sup> / <sub>2</sub> - 19	19 - 20	17 - 17 <sup>1</sup> / <sub>2</sub>	16 <sup>1</sup> / <sub>2</sub> - 17	15.2 - 15.6
" 26.....	18 <sup>1</sup> / <sub>2</sub> - 19	19 - 20	17 - 17 <sup>1</sup> / <sub>2</sub>	16 <sup>1</sup> / <sub>2</sub> - 17	15.2 - 15.9
March 5.....	19 - 19 <sup>1</sup> / <sub>2</sub>	19 - 20	17 - 17 <sup>1</sup> / <sub>2</sub>	16 <sup>1</sup> / <sub>2</sub> - 17 <sup>1</sup> / <sub>2</sub>	15.4 - 16.0
" 12.....	19 - 19 <sup>1</sup> / <sub>2</sub>	19 - 20	.. - 19	17 - 18 <sup>1</sup> / <sub>2</sub>	15.4 - 16.0
" 19.....	19 - 19 <sup>1</sup> / <sub>2</sub>	21 - 22	.. - 19	.. - 19	15.4 - 16 0
" 26.....	19 - 19 <sup>1</sup> / <sub>2</sub>	22 - ..	.. - 20 <sup>1</sup> / <sub>2</sub>	.. - 19	15.9 - 16.0



WHOLESALE QUOTATIONS FOR DRESSED BEEF (No. 1 CARCASS) EACH WEEK FROM APRIL 3, 1912, TO MARCH 26, 1913.

(From "Canadian Farm" and "National Provisioner.")

Week.	Toronto.	Montreal.	Chicago.	New York.	Winnipeg.
1912.	\$	\$	\$	\$	\$
April 3 . . . . .	10.50-11.00	9.00-10.00	11.50-12.50	11.50-12.50	9.00-9.50
" 10 . . . . .	10.50-11.00	9.00-10.00	11.25-12.25	11.50-12.50	9.00-9.50
" 17 . . . . .	10.50-11.00	9.00-10.00	11.75-14.25	12.00-13.00	9.00-9.50
" 24 . . . . .	10.50-11.00	9.25-10.25	11.25-12.00	12.50-13.00	9.00-9.50
May 1 . . . . .	11.00-11.50	10.00-10.75	11.25-12.00	12.50-13.00	9.00-9.50
" 8 . . . . .	11.00-11.50	10.00-10.75	12.00-12.50	12.50-13.00	9.00-9.50
" 15 . . . . .	11.00-11.50	10.00-10.75	12.00-12.50	12.50-13.50	9.00-9.50
" 22 . . . . .	11.00-11.50	11.00-11.50	12.25-13.00	12.50-13.50	9.00-9.50
" 29 . . . . .	11.50-12.00	11.00-12.00	12.25-13.00	12.50-13.50	9.00-9.50
June 5 . . . . .	11.50-12.00	11.00-12.00	12.50-13.25	13.00-13.50	11.00-11.50
" 12 . . . . .	10.00-11.00	11.00-12.00	12.50-13.25	13.00-13.50	11.00-11.50
" 19 . . . . .	12.00-13.00	11.00-12.00	13.00-13.50	13.50-14.00	11.00-11.50
" 26 . . . . .	12.00-13.00	11.00-12.00	13.00-13.50	14.00-14.50	11.00-11.50
July 3 . . . . .	12.00-13.00	12.00-13.25	13.00-13.75	14.00-14.50	11.00-11.50
" 10 . . . . .	12.00-13.00	12.00-13.25	13.00-13.75	14.00-14.50	11.00-11.50
" 17 . . . . .	11.50-12.25	12.00-13.25	13.00-13.75	14.00-14.50	11.00-11.50
" 24 . . . . .	11.50-12.25	12.00-13.25	13.00-14.00	14.00-14.50	11.00-11.50
" 31 . . . . .	11.50-12.25	12.00-13.25	13.00-14.00	14.00-15.00	11.00-11.50
Aug. 7 . . . . .	11.50-12.25	12.00-13.25	13.00-14.00	14.50-15.50	11.00-11.50
" 14 . . . . .	11.50-12.25	12.00-13.25	13.50-14.50	15.00-15.50	11.00-11.50
" 21 . . . . .	11.50-12.25	12.00-13.25	13.50-14.50	15.00-15.50	11.00-11.50
" 28 . . . . .	11.50-11.75	12.00-13.25	14.00-15.00	15.00-15.50	11.00-11.50
Sept. 4 . . . . .	11.50-11.75	12.00-13.25	14.00-15.00	14.50-15.50	11.00-11.50
" 11 . . . . .	11.50-11.75	12.00-13.25	14.00-15.00	14.50-15.50	11.00-11.50
" 18 . . . . .	10.50-11.50	12.00-13.25	14.00-15.00	14.50-15.50	11.00-11.50
" 25 . . . . .	10.00-11.25	12.00-13.25	11.75-15.25	14.50-15.50	11.00-11.50
Oct. 2 . . . . .	10.75-11.50	12.00-13.25	14.75-15.25	14.50-15.50	11.00-11.50
" 9 . . . . .	9.75-10.75	12.00-13.25	14.75-15.25	14.50-15.50	9.50-10.00
" 16 . . . . .	10.50-11.00	11.00-11.25	14.75-16.00	14.50-15.50	9.50-10.00
" 23 . . . . .	10.50-11.00	11.00-11.25	15.00-16.00	14.50-15.50	9.50-10.00
" 30 . . . . .	10.50-11.00	11.00-11.25	14.75-15.00	14.50-15.50	10.00-10.50
Nov. 6 . . . . .	10.50-11.00	11.00-12.25	14.50-15.00	14.00-15.00	10.00-10.50
" 13 . . . . .	10.50-11.00	11.00-11.25	14.50-14.75	14.00-15.00	10.00-10.50
" 20 . . . . .	10.50-11.00	11.00-11.25	14.25-14.75	14.00-15.00	10.00-10.50
" 27 . . . . .	10.25-11.00	11.00-11.25	14.50-14.75	14.00-15.00	10.00-10.50
Dec. 4 . . . . .	10.25-11.00	11.00-11.25	14.50-14.75	14.00-15.00	10.00-10.50
" 11 . . . . .	10.25-11.00	11.00-11.25	14.75-15.00	14.00-15.00	10.00-10.50
" 18 . . . . .	10.25-11.00	11.00-12.00	15.00-15.25	13.50-14.50	10.50-11.00
" 25 . . . . .	10.25-11.00	11.00-12.00	15.00-15.25	13.50-14.50	10.50-11.00
1913.					
Jan. 1 . . . . .	10.25-11.00	11.00-12.00	15.00-15.25	13.50-14.50	11.00-11.50
" 8 . . . . .	10.25-11.00	11.00-12.00	14.75-15.00	13.00-14.00	11.00-11.50
" 15 . . . . .	11.00-11.50	11.00-12.00	14.75-15.00	13.00-14.00	11.00-11.50
" 22 . . . . .	11.00-11.50	11.00-12.00	14.50-15.00	13.00-13.50	11.00-11.50
" 29 . . . . .	11.00-11.50	11.00-12.00	.....-14.00	13.00-13.50	11.00-11.50
Feb. 5 . . . . .	11.00-11.50	11.00-12.00	13.50-14.00	13.00-13.50	11.00-11.50
" 12 . . . . .	11.00-11.50	11.00-12.00	13.00-13.50	13.00-13.50	11.00-11.50
" 19 . . . . .	11.00-11.50	11.00-12.00	13.50-14.00	13.00-13.50	11.00-11.50
" 26 . . . . .	11.00-11.50	11.00-12.00	13.25-13.50	13.00-13.50	11.00-11.25
March 5 . . . . .	11.00-11.50	11.00-12.00	13.00-13.25	13.00-13.50	11.00-11.25
" 12 . . . . .	11.00-11.50	11.00-12.00	13.00-13.50	13.50-14.00	10.75-11.00
" 19 . . . . .	11.00-11.50	11.00-12.00	13.00-13.50	13.50-14.00	10.75-11.00
" 26 . . . . .	11.00-11.50	11.00-12.00	13.00-13.50	13.50-14.00	11.00-11.50



## SESSIONAL PAPER No. 15a

WHOLESALE QUOTATIONS FOR LIVE HOGS EACH WEEK FROM APRIL 3, 1912, TO  
MARCH 26, 1913.(From "Weekly Sun," "Journal of Commerce," "Free Press," Winnipeg, "Buffalo Commercial"  
and "National Provisioner.")

Week.	1912.	Toronto.	Montreal.	Winnipeg.	Chicago.	Buffalo.	New York.
		"Choice" per 100 lbs.	"Selects" per 100 lbs.	"Choice."	"Bulk of Sales."	"Yorkers."	"Medium Weight."
		\$	\$	\$	\$	\$	\$
April	3.....	8.00 - 8.10	9.00 - .....	..... - 8.00	7.85 - 8.00	8.35 - 8.40	8.55 - 8.60
"	10.....	8.35 - .....	9.00 - 9.25	8.00 - 8.10	7.70 - 7.85	8.10 - 8.15	..... - 8.55
"	17.....	8.50 - 8.65	9.25 - 9.40	8.75 - 9.00	7.90 - 8.05	8.25 - 8.35	..... - 8.55
"	24.....	8.60 - .....	9.40 - 9.50	8.75 - 9.00	.....	.....	..... - 8.50
May	1.....	8.75 - .....	9.60 - 9.75	9.00 - 9.25	7.60 - 7.80	8.10 - 8.20	..... - 8.50
"	8.....	8.75 - .....	9.40 - 9.65	..... - 10.00	7.60 - 7.75	8.00 - 8.10	..... - 8.55
"	15.....	8.95 - .....	9.25 - 9.60	10.00 - .....	7.65 - 7.85	8.05 - 8.10	..... - 8.55
"	22.....	8.90 - 8.95	9.65 - 9.75	10.00 - .....	7.60 - 7.80	7.80 - 7.90	..... - 8.50
"	29.....	8.75 - .....	9.75 - .....	9.00 - .....	7.40 - 7.50	8.10 - 8.20	..... - 8.50
June	5.....	8.50 - .....	9.25 - 9.40	9.00 - 9.25	7.40 - 7.50	7.70 - 7.80	..... - 8.40
"	12.....	8.55 - .....	9.00 - 9.15	8.75 - 9.00	7.45 - 7.60	7.80 - 7.95	..... - 8.40
"	19.....	8.60 - .....	9.00 - 9.25	8.50 - 8.75	7.35 - 7.45	7.40 - 7.60	..... - 8.40
"	26.....	8.25 - 8.35	9.00 - 9.25	.....	7.40 - 7.55	7.90 - 7.95	..... - 8.40
July	3.....	8.00 - .....	8.75 - 9.00	8.25 - 8.50	7.35 - 7.50	7.65 - 7.75	..... - 8.40
"	10.....	7.85 - .....	8.40 - 8.65	8.25 - .....	7.40 - 7.70	8.20 - 8.25	8.50 - .....
"	17.....	8.00 - .....	8.50 - 8.70	8.25 - 8.50	7.35 - 7.65	8.00 - 8.10	8.50 - .....
"	24.....	8.20 - .....	9.00 - .....	8.75 - .....	7.70 - 7.95	8.60 - .....	8.50 - .....
"	31.....	8.60 - .....	9.25 - .....	8.75 - 9.00	7.40 - 7.90	8.75 - 8.80	9.00 - .....
Aug.	7.....	8.50 - .....	8.75 - 9.00	8.75 - 9.00	7.75 - 8.30	8.80 - 8.90	9.00 - .....
"	14.....	8.60 - .....	8.75 - 9.60	8.75 - 9.00	7.90 - 8.40	8.95 - 9.00	9.00 - .....
"	21.....	8.65 - .....	9.00 - .....	8.75 - 9.00	8.10 - 8.50	8.90 - 9.00	9.00 - .....
"	28.....	8.50 - .....	8.50 - 9.00	8.75 - 9.00	8.30 - 8.75	9.35 - 9.50	9.00 - .....
Sept.	4.....	8.50 - .....	8.25 - 8.50	9.50 - .....	8.05 - 8.70	9.50 - 9.60	9.10 - .....
"	11.....	8.50 - .....	8.25 - 8.75	10.00 - .....	8.20 - .....	9.40 - 9.50	9.35 - .....
"	18.....	8.85 - .....	8.65 - 8.80	10.25 - .....	8.05 - 8.50	8.75 - 8.80	9.05 - 9.10
"	25.....	9.10 - .....	9.00 - 9.10	9.50 - .....	8.30 - 8.75	8.90 - 9.00	9.20 - .....
Oct.	2.....	8.75 - .....	8.50 - 8.90	9.00 - 9.50	8.50 - 8.90	9.10 - 9.25	9.30 - .....
"	9.....	8.25 - 8.30	8.75 - 9.00	9.25 - 9.50	8.90 - 9.15	9.25 - 9.35	9.45 - 9.50
"	16.....	8.35 - .....	8.65 - 8.75	9.25 - 9.50	8.90 - 9.20	8.60 - 9.00	9.20 - 9.25
"	23.....	8.60 - .....	..... - 9.00	9.25 - 9.50	8.35 - 8.60	8.50 - 8.75	..... - 9.25
"	30.....	8.60 - .....	..... - 9.25	9.25 - 9.50	7.45 - 7.75	7.70 - 7.80	..... - 8.50
Nov.	6.....	8.00 - .....	8.75 - 9.00	9.00 - .....	7.70 - 7.95	7.75 - 7.95	8.40 - .....
"	13.....	7.85 - .....	8.50 - 8.65	8.50 - .....	7.55 - 7.90	7.80 - 8.00	8.40 - .....
"	20.....	8.10 - .....	8.75 - 9.00	8.00 - .....	7.70 - 7.85	7.95 - 8.00	8.40 - .....
"	27.....	8.00 - .....	9.00 - .....	8.00 - .....	7.65 - 7.80	7.85 - 7.90	8.20 - .....
Dec.	4.....	8.25 - 8.35	9.00 - 9.25	8.00 - .....	7.50 - 7.65	7.60 - 7.70	8.00 - .....
"	11.....	8.00 - .....	9.00 - .....	8.25 - .....	7.40 - 7.50	7.65 - 7.70	8.00 - .....
"	18.....	8.00 - .....	8.75 - 8.90	8.50 - .....	7.10 - 7.20	7.35 - 7.40	7.95 - .....
"	25.....	8.25 - .....	8.75 - 8.90	8.00 - .....	7.30 - 7.50	7.85 - 7.90	8.15 - .....
1913.							
Jan.	1.....	8.25 - 8.40	9.00 - 9.25	8.00 - .....	7.40 - 7.50	7.80 - 7.85	8.40 - .....
"	8.....	8.50 - .....	9.10 - 9.25	8.00 - 8.25	7.35 - 7.45	7.80 - .....	8.30 - .....
"	15.....	.....	9.25 - 9.50	8.00 - 8.25	7.25 - 7.40	7.60 - 7.75	8.05 - .....
"	22.....	8.25 - .....	9.25 - 9.50	8.00 - 8.25	7.45 - 7.50	8.00 - 8.10	7.95 - .....
"	29.....	8.60 - .....	8.75 - 9.00	8.00 - 8.25	7.55 - 7.65	8.00 - 8.10	8.15 - .....
Feb.	5.....	8.75 - .....	.....	8.25 - .....	7.57 - 7.85	8.25 - 8.30	8.30 - .....
"	12.....	8.90 - .....	9.40 - 9.65	8.25 - .....	8.20 - 8.35	9.00 - 9.05	9.40 - .....
"	19.....	9.00 - .....	9.90 - 10.10	8.25 - .....	8.30 - 8.40	8.85 - 8.90	9.40 - .....
"	26.....	9.25 - 9.30	9.80 - 10.00	8.25 - .....	8.35 - 8.50	8.95 - 9.00	9.20 - .....
March	5.....	9.50 - .....	10.00 - 10.25	8.50 - .....	8.50 - 8.65	9.10 - .....	9.40 - .....
"	12.....	9.65 - .....	10.30 - 10.40	8.50 - .....	8.50 - 8.65	9.50 - 9.60	9.75 - 9.80
"	19.....	9.40 - .....	10.40 - 10.50	8.50 - .....	8.90 - 9.10	9.60 - 9.65	9.75 - 9.80
"	26.....	9.65 - 9.75	10.40 - 10.50	8.50 - .....	8.95 - 9.05	9.90 - .....	10.35 - .....



4 GEORGE V., A. 1914

WHOLESALE QUOTATIONS FOR LIVE CATTLE EACH WEEK FROM APRIL 3, 1912, TO  
MARCH 26, 1913.

(From "Canadian Farm.")

Week.	Toronto.		Montreal.	Winnipeg.
	Export Steers "Choice."	Butcher Steers "Prime."	Butcher Steers "Prime."	Butcher Steers "Prime."
1912.	\$	\$	\$	\$
April 3.....	6.80-7.40	6.90-7.00	8.00-8.25	6.00-6.10
" 10.....	6.75-7.25	7.30-7.40	7.25-8.50	6.00-6.25
" 17.....	7.00-7.25	7.30-7.35	7.25-7.20	6.00-6.50
" 24.....	7.00-7.30	7.00-7.30	7.50-7.75	6.50-6.75
May 1.....	7.00-7.40	7.25-7.40	7.75-7.80	6.50-6.75
" 8.....	7.10-7.50	7.25-7.40	7.75-.....	6.50-7.00
" 15.....	7.50-7.75	7.40-7.50	7.75-8.00	6.50-7.00
" 22.....	7.50-8.00	7.40-7.60	7.75-8.25	6.50-7.00
" 29.....	7.50-8.00	7.75-7.90	7.75-8.50	6.50-7.00
June 5.....	7.25-8.00	7.90-8.00	8.00-8.25	6.50-7.00
" 12.....	7.65-8.15	7.90-8.00	8.00-8.50	6.75-7.25
" 19.....	8.10-8.40	8.20-8.25	8.25-8.50	7.00-7.25
" 26.....	8.10-8.40	8.20-8.25	8.25-8.50	7.00-7.25
July 3.....	8.10-8.20	8.10-8.20	8.10-8.25	7.00-7.25
" 10.....	8.00-8.10	8.00-.....	7.30-8.00	7.00-7.25
" 17.....	7.50-7.85	7.40-7.75	7.25-7.50	7.00-7.25
" 24.....	7.40-7.75	7.40-7.75	7.25-7.50	7.00-7.25
" 31.....	7.40-7.65	7.40-7.75	7.25-7.50	7.00-7.25
Aug. 7.....	7.60-7.50	7.15-7.50	6.75-7.00	7.00-7.25
" 14.....	7.00-7.20	7.15-7.50	6.75-7.00	7.00-7.25
" 21.....	7.00-7.25	7.15-7.25	7.00-7.25	7.00-7.25
" 28.....	6.85-7.00	6.90-7.00	7.25-7.30	.....
Sept. 4.....	6.85-7.00	6.90-7.00	6.90-7.00	.....
" 11.....	6.85-7.00	6.90-7.00	6.75-7.00	.....
" 18.....	6.85-7.00	.....	.....	.....
" 25.....	.....	.....	7.00-7.55	.....
Oct. 2.....	.....	.....	.....	.....
" 9.....	6.00-6.40	.....	.....	.....
" 16.....	.....	.....	.....	5.75-6.50
" 23.....	6.00-6.25	.....	.....	6.00-6.25
" 30.....	6.00-6.35	.....	.....	6.00-6.25
Nov. 6.....	6.00-6.35	.....	.....	6.00-6.25
" 13.....	6.00-6.35	6.25-6.40	.....	.....
" 20.....	6.00-6.35	.....	.....	.....
" 27.....	6.25-6.50	6.25-6.50	.....	5.75-6.00
Dec. 4.....	6.25-6.50	6.25-6.50	.....	5.75-6.00
" 11.....	6.25-6.50	6.25-7.20	.....	6.00-6.75
" 18.....	6.25-6.50	6.25-7.20	7.50-8.00	6.90-7.00
" 25.....	6.25-6.50	6.25-7.00	.....	.....
1913.				
Jan. 1.....	6.25-6.50	6.25-7.00	7.00-7.50	.....
" 8.....	6.25-6.50	6.85-6.90	7.00-7.25	.....
" 15.....	6.25-7.00	6.85-7.00	7.00-7.25	.....
" 22.....	.....	6.75-7.00	.....	.....
" 29.....	.....	7.10-7.20	.....	6.50-6.75
Feb. 5.....	.....	7.00-7.10	.....	6.50-7.00
" 12.....	.....	6.90-7.00	7.00-7.25	6.50-7.00
" 19.....	.....	6.90-7.00	7.00-7.25	6.50-7.00
" 26.....	.....	6.90-7.00	6.75-7.00	6.50-7.00
March 5.....	.....	6.85-6.90	7.25-7.50	7.00-7.25
" 12.....	.....	7.00-7.50	7.25-7.50	6.75-7.25
" 19.....	.....	6.90-7.00	7.25-7.50	6.75-7.00
" 26.....	.....	6.75-6.85	7.00-7.25	6.70-7.00



SESSIONAL PAPER No. 15a

WHOLESALE QUOTATIONS FOR LIVE CATTLE EACH WEEK FROM APRIL 3, 1912, TO  
MARCH 26, 1913.

(From "Buffalo Commercial" and "National Provisioner.")

Week.	Chicago.		Buffalo.		New York.
	Steers Good to Prime.	Steers Fair to Good.	Prime Steers.	Shipping Steers.	Good to Choice Native Steers.
1912.	\$	\$	\$	\$	\$
April 3.....	7.50-8.85	6.25-7.50	7.75-7.85	7.00-7.40	6.85-8.00
" 10.....	7.50-8.85	6.25-7.50	8.00-8.25	7.00-7.50	7.00-8.15
" 17.....	7.50-8.85	6.25-7.50	8.30-8.50	7.75-8.25	7.00-8.25
" 24.....	7.50-8.85	6.25-7.50			7.00-8.50
May 1.....	9.00-.....	7.00-.....	8.50-8.75	8.25-8.40	7.25-8.60
" 8.....	7.25-9.00	6.25-7.25	8.50-8.60	7.75-8.25	7.40-8.65
" 15.....	8.00-9.25	6.50-8.00	8.60-8.80	7.85-8.80	7.60-8.75
" 22.....	8.25-9.30	6.75-8.25	8.75-9.10	7.75-8.60	7.85-9.00
" 29.....	8.25-9.40	6.75-8.25	8.75-9.00	7.75-8.60	7.85-9.00
June 5.....	8.25-9.40	6.75-8.75	8.90-9.15	8.25-8.75	7.90-9.40
" 12.....	8.75-9.40	6.75-8.75	9.00-9.30	8.25-8.75	8.00-9.30
" 19.....	8.75-9.35	6.75-8.75	9.00-9.30	8.25-8.75	8.10-9.40
" 26.....	8.50-9.50	6.50-8.50	9.00-9.35	8.25-8.75	8.20-9.60
July 3.....	8.50-9.65	6.50-8.50	9.00-9.25	8.00-8.50	8.15-9.75
" 10.....	8.50-9.70	6.50-8.50	9.00-9.25	8.00-8.85	8.15-9.60
" 17.....	8.40-9.60	6.40-8.35	9.00-9.15	8.00-8.75	7.75-9.50
" 24.....	8.30-9.50	6.40-8.35	8.80-9.25	7.25-7.70	7.60-9.00
" 31.....	8.75-9.75	6.40-8.25	9.15-9.40	8.25-8.75	8.15-9.50
Aug. 7.....	9.00-10.10	6.40-8.50	9.15-9.40	8.25-8.75	8.00-9.50
" 14.....	9.00-10.25	6.40-8.50	9.25-9.65	8.25-9.15	8.00-9.60
" 21.....	9.00-10.50	6.40-8.50	9.25-9.50	9.00-.....	7.80-9.35
" 28.....	9.05-10.55	6.45-8.60	9.25-9.75	8.00-9.25	7.85-9.35
Sept. 4.....	9.00-10.50	6.40-8.50	9.50-9.85	8.00-9.25	8.00-9.50
" 11.....	9.00-10.70	6.40-9.00	9.50-9.85	8.00-9.25	8.15-9.50
" 18.....	9.50-10.90	.....	9.50-9.75	8.00-9.25	8.00-9.75
" 25.....	9.50-11.00	.....	9.00-9.50	7.75-8.35	7.85-9.75
Oct. 2.....	9.50-11.00	.....	9.00-9.50	7.75-8.25	7.75-9.50
" 9.....	9.50-11.00	.....	9.00-9.60	7.80-8.35	7.90-9.60
" 16.....	9.50-11.00	7.50-9.50	9.00-9.50	7.80-8.50	7.90-9.60
" 23.....	9.50-11.00	7.50-9.50	9.00-9.35	7.75-8.25	8.00-9.50
" 30.....	9.50-11.05	7.50-9.50	9.00-9.25	7.75-8.65	8.00-9.40
Nov. 6.....	9.50-11.00	7.50-9.50	9.00-9.25	7.75-8.65	8.00-9.60
" 13.....	9.00-10.90	7.25-9.60	9.00-9.25	7.75-8.65	8.00-9.70
" 20.....	9.00-11.00	7.25-9.60	9.15-9.35	7.75-8.75	7.90-9.50
" 27.....	9.00-11.00	7.25-9.00	9.15-9.35	7.75-8.75	8.00-9.40
Dec. 4.....	9.00-11.00	7.25-9.00	9.00-9.40	8.25-8.75	8.25-9.60
" 11.....	9.00-11.00	7.25-9.00	9.25-9.50	8.25-9.00	8.25-9.60
" 18.....	9.00-11.00	7.25-9.00	8.75-9.00	7.50-8.50	8.20-9.60
" 25.....	9.00-10.25	7.25-9.00	8.75-9.00	7.50-8.50	7.90-9.40
1913.					
Jan. 1.....	9.25-10.00	7.25-8.25	8.75-9.00	8.00-8.65	7.85-9.00
" 8.....	9.25-9.50	7.25-8.25	9.00-9.25	8.25-8.75	7.50-8.60
" 15.....	8.25-9.40	7.25-8.25	8.85-9.00	8.25-8.50	7.50-8.60
" 22.....	8.25-9.25	7.25-8.25	8.50-8.75	7.75-8.25	7.50-8.50
" 29.....	8.25-9.25	7.25-8.25	8.50-8.75	7.25-8.25	7.75-8.30
Feb. 5.....	8.25-9.25	7.25-8.25	8.25-8.50	7.50-8.00	7.35-8.65
" 12.....	8.00-9.00	7.00-8.00	8.25-8.60	7.60-8.25	7.40-8.75
" 19.....	8.25-9.00	7.00-8.25	8.40-8.75	7.75-8.25	7.75-9.00
" 26.....	8.25-9.25	7.00-8.25	8.35-8.65	7.75-8.25	7.60-8.75
Mar. 5.....	8.25-9.00	7.00-8.25	8.40-8.75	7.75-8.25	7.75-9.00
" 12.....	8.50-9.30	7.25-8.50	.....	.....	8.00-9.25
" 19.....	8.50-9.20	7.25-8.50	8.75-9.00	7.50-8.50	8.35-9.50
" 26.....	8.50-9.20	7.25-8.50	8.75-9.00	7.50-8.50	8.10-9.15



WHOLESALE QUOTATIONS FOR CASH WHEAT EACH WEEK FROM APRIL 6, 1912, TO  
MARCH 29, 1913.

(Prices for first three markets taken from "Weekly Northwestern Miller," Liverpool prices from "Free Press," Winnipeg).

Week.	Minneapolis.	Chicago.	Winnipeg.	Liverpool.
	No. 1 Northern per bushel.	No. 1 Northern per bushel.	No. 1 Northern per bushel.	No. 1 Northern (Manitoba) per bushel.
1912.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
April 6.....	1 07 <sup>1</sup> / <sub>2</sub>	1 10 <sup>1</sup> / <sub>2</sub>	1 00 <sup>3</sup> / <sub>4</sub>	
" 13.....	1 09 <sup>1</sup> / <sub>2</sub>	1 12	1 03 <sup>1</sup> / <sub>2</sub>	
" 20.....	1 13	1 18	1 03 <sup>1</sup> / <sub>2</sub>	
" 27.....	1 16 <sup>3</sup> / <sub>4</sub>	1 20	1 04 <sup>1</sup> / <sub>4</sub>	
May 4.....	1 16 <sup>3</sup> / <sub>4</sub>	1 18 <sup>1</sup> / <sub>2</sub>	1 04 <sup>1</sup> / <sub>2</sub>	
" 11.....	1 18 <sup>1</sup> / <sub>4</sub>	1 20 <sup>1</sup> / <sub>2</sub>	1 04 <sup>1</sup> / <sub>2</sub>	
" 18.....	1 11	1 18	1 03 <sup>1</sup> / <sub>4</sub>	
" 25.....	1 15	1 18 <sup>1</sup> / <sub>2</sub>	1 04 <sup>1</sup> / <sub>4</sub>	
June 1.....	1 12 <sup>1</sup> / <sub>2</sub>	1 17 <sup>1</sup> / <sub>2</sub>		
" 8.....	1 15	1 18	1 05 <sup>3</sup> / <sub>4</sub>	
" 15.....	1 11 <sup>1</sup> / <sub>2</sub>	1 16	1 06	
" 22.....	1 11	1 12 <sup>1</sup> / <sub>2</sub>	1 08	
" 29.....	1 12	1 16	1 08 <sup>1</sup> / <sub>4</sub>	
July 6.....	1 10 <sup>1</sup> / <sub>2</sub>	1 13	1 06	
" 13.....	1 11	1 11 <sup>1</sup> / <sub>2</sub>	1 09	
" 20.....	1 04 <sup>5</sup> / <sub>8</sub>	1 10	1 06 <sup>1</sup> / <sub>2</sub>	
" 27.....	1 05	1 08 <sup>1</sup> / <sub>2</sub>	1 07	
Aug. 3.....	1 07	1 08	1 07	
" 10.....	1 05	1 04 <sup>1</sup> / <sub>2</sub>	1 05	
" 17.....	1 05 <sup>3</sup> / <sub>4</sub>	1 01 <sup>1</sup> / <sub>2</sub>	1 06 <sup>1</sup> / <sub>2</sub>	
" 24.....	0 99	1 00		
" 31.....	0 92	0 97 <sup>1</sup> / <sub>2</sub>	1 05 <sup>3</sup> / <sub>4</sub>	1 23 <sup>1</sup> / <sub>2</sub>
Sep. 7.....	0 86 <sup>1</sup> / <sub>2</sub>	0 93 <sup>3</sup> / <sub>4</sub>		1 22 <sup>3</sup> / <sub>8</sub>
" 14.....	0 89	0 93 <sup>1</sup> / <sub>2</sub>	0 96	
" 21.....	0 90 <sup>1</sup> / <sub>2</sub>	0 93 <sup>1</sup> / <sub>2</sub>	0 95 <sup>1</sup> / <sub>2</sub>	
" 28.....	0 87 <sup>1</sup> / <sub>2</sub>	0 91 <sup>1</sup> / <sub>4</sub>	0 90	
Oct. 5.....	0 88 <sup>1</sup> / <sub>2</sub>	0 93	0 89 <sup>1</sup> / <sub>4</sub>	
" 12.....	0 90		0 92 <sup>3</sup> / <sub>4</sub>	
" 19.....	0 88 <sup>1</sup> / <sub>4</sub>	0 93 <sup>1</sup> / <sub>2</sub>	0 89 <sup>3</sup> / <sub>4</sub>	
" 26.....	0 88 <sup>1</sup> / <sub>2</sub>	0 93	0 86 <sup>3</sup> / <sub>4</sub>	
Nov. 2.....			0 87 <sup>1</sup> / <sub>2</sub>	
" 9.....	0 87	0 90	0 86 <sup>1</sup> / <sub>2</sub>	1 12 <sup>3</sup> / <sub>4</sub>
" 16.....	0 83	0 87 <sup>1</sup> / <sub>4</sub>	0 83	1 11
" 23.....	0 82 <sup>1</sup> / <sub>2</sub>	0 86 <sup>1</sup> / <sub>4</sub>	0 80 <sup>1</sup> / <sub>2</sub>	1 08 <sup>1</sup> / <sub>2</sub>
" 30.....	0 81 <sup>1</sup> / <sub>4</sub>	0 86	0 79	1 09 <sup>3</sup> / <sub>4</sub>
Dec. 7.....	0 82 <sup>1</sup> / <sub>2</sub>	0 86 <sup>3</sup> / <sub>4</sub>	0 79 <sup>1</sup> / <sub>2</sub>	1 09 <sup>1</sup> / <sub>2</sub>
" 14.....	0 81 <sup>1</sup> / <sub>2</sub>	0 87	0 79 <sup>1</sup> / <sub>4</sub>	1 09 <sup>1</sup> / <sub>2</sub>
" 21.....	0 82 <sup>1</sup> / <sub>4</sub>	0 88	0 81	1 09 <sup>1</sup> / <sub>2</sub>
" 28.....	0 82 <sup>1</sup> / <sub>2</sub>	0 89 <sup>1</sup> / <sub>4</sub>	0 81 <sup>1</sup> / <sub>2</sub>	1 09 <sup>1</sup> / <sub>4</sub>
1913.				
Jan. 4.....	0 83 <sup>1</sup> / <sub>2</sub>	0 89 <sup>3</sup> / <sub>4</sub>	0 81 <sup>1</sup> / <sub>2</sub>	1 11
" 11.....	0 86 <sup>1</sup> / <sub>2</sub>	0 91 <sup>1</sup> / <sub>2</sub>	0 82 <sup>1</sup> / <sub>2</sub>	1 11 <sup>1</sup> / <sub>2</sub>
" 18.....	0 87 <sup>1</sup> / <sub>2</sub>	0 92	0 82 <sup>1</sup> / <sub>2</sub>	1 12 <sup>1</sup> / <sub>2</sub>
" 25.....	0 86	0 91	0 81 <sup>1</sup> / <sub>2</sub>	1 11 <sup>1</sup> / <sub>2</sub>
Feb. 1.....	0 87 <sup>1</sup> / <sub>4</sub>	0 92 <sup>1</sup> / <sub>4</sub>	0 83 <sup>1</sup> / <sub>2</sub>	1 11 <sup>1</sup> / <sub>2</sub>
" 8.....	0 87	0 93 <sup>1</sup> / <sub>2</sub>	0 84 <sup>1</sup> / <sub>2</sub>	1 11 <sup>1</sup> / <sub>2</sub>
" 15.....	0 86 <sup>1</sup> / <sub>2</sub>	0 92 <sup>1</sup> / <sub>4</sub>	0 83 <sup>3</sup> / <sub>4</sub>	1 06 <sup>1</sup> / <sub>4</sub>
" 22.....			0 84 <sup>1</sup> / <sub>2</sub>	
Mar. 1.....	0 86 <sup>3</sup> / <sub>4</sub>	0 91 <sup>1</sup> / <sub>2</sub>	0 85 <sup>1</sup> / <sub>2</sub>	
" 8.....	0 84 <sup>3</sup> / <sub>8</sub>	0 90 <sup>1</sup> / <sub>2</sub>	0 85 <sup>1</sup> / <sub>2</sub>	
" 15.....				1 11 <sup>1</sup> / <sub>2</sub>
" 22.....	0 85 <sup>3</sup> / <sub>8</sub>	0 89 <sup>3</sup> / <sub>4</sub>		
" 29.....	0 85 <sup>1</sup> / <sub>4</sub>	0 89 <sup>1</sup> / <sub>4</sub>	0 86 <sup>1</sup> / <sub>2</sub>	



SESSIONAL PAPER No. 15a

WHOLESALE QUOTATIONS FOR MALTING BARLEY EACH WEEK FROM APRIL 6, 1912,  
TO MARCH 29, 1913.

(From "Weekly Northwestern Miller.")

Week.	Minneapolis	Buffalo.	Milwaukee.	Toronto.	Winnipeg.
	"Best Malting" per bushel.	"Best Malting" per bushel.	"No. 2" per bushel.	"No. 2" per bushel.	"No. 3" per bushel.
1912.	\$	\$ \$	\$ \$	Cts.	Cts.
April 6.....	1 30	1 26-1 38	1 37-1 39	95-....	66
" 13.....	1 30	1 27-1 40	1 37-1 38	95-....	70
" 20.....	1 30	1 25-1 38	1 36-1 38	92-....	70
" 27.....	1 30	1 22-1 35	1 36 1 38	85-90	71½
May 4.....	1 30	1 24-1 38	1 30-1 35	90-92	.....
" 11.....	1 30	1 24-1 30	1 30-1 32	90-....	69
" 18.....	1 27	1 16-1 26	1 26-1 28	88-90	.....
" 25.....	1 20	1 16-1 25	1 25-1 28	85-88	65
June 1.....	1 15	1 15-1 25	1 21-1 23	85-....	.....
" 8.....	1 15	1 15-1 25	1 21-1 23	85-....	.....
" 15.....	1 10	1 14-1 23	1 20-1 21	85-....	.....
" 22.....	95	.....	1 05-1 08	85-....	57
" 29.....	95	.....	1 06-1 08	85-....	.....
July 6.....	95	.....	1 08-1 10	85-....	.....
" 13.....	95	.....	1 08-1 10	85-....	.....
" 20.....	85	.....	1 00-1 11	85-....	50
" 27.....	85	.....	70- 90	85-....	.....
Aug. 3.....	75	.....	65- 80	85-....	51
" 10.....	68	.....	60- 80	.....	.....
" 17.....	65	63- 65	70- 75	55-....	.....
" 24.....	64	63- 65	70- 75	55-....	50
" 31.....	62	62- 72	75- 76	60-....	75-80
Sept. 7.....	66	62- 76	76- 77	60-....	53
" 14.....	66	60- 72	74- 76	60-....	48
" 21.....	67	62- 66	75- 76	60-....	52
" 28.....	67	64- 70	75- ..	65-....	53
Oct. 5.....	66	65- 66	73- 75	65-....	52
" 12.....	66	60- 62	73- 74	70-....	55
" 19.....	67	60- 70	74- 76	70-....	55
" 26.....	66	60- 70	74- 75	70-....	56½
Nov. 2.....	65	.....	75-....	70-....	56
" 9.....	60	58- 62	74- 75	70-....	54
" 16.....	59	70-....	73- 74	70-....	50½
" 23.....	62	.....	73- 74	70-....	44
" 30.....	58	68-....	73- 74	70-....	44
Dec. 7.....	59	59- 69	73- 75	70-....	48
" 14.....	59	64- 65	72- 75	60-65	46½
" 21.....	60	60- 67	72- 75	60-65	45½
" 28.....	60	60- 70	72- 75	60-65	46
1913.					
Jan. 4.....	62	60- 70	72- 75	60-65	45
" 11.....	63	60- 70	71- 74	60-65	46
" 18.....	61	63- 72	71- 74	60-65	48
" 25.....	59	60- 68	71- 73	60-65	47½
Feb. 1.....	59	62- 70	70- 72	60-65	47¼
" 8.....	58	60- 70	72- 73	60-65	47¼
" 15.....	57	58- 72	71- 72	60-65	47½
" 22.....	.....	58- 72	70- 72	60-65	47½
March 1.....	55	58- 62	70- 71	60-65	46¼
" 8.....	56	58- 65	70- 71	55-60	46½
" 15.....	.....	.....	.....	.....	47½
" 22.....	56	58- 62	68- 70	55-60	47
" 29.....	57	.....	68- 70	55-60	47¼



WHOLESALE QUOTATIONS FOR SPRING WHEAT FLOUR, SECOND PATENT, IN SACKS, IN FIRST WEEK OF EACH MONTH FROM APRIL, 1912, TO MARCH, 1913.

("From Weekly Northwestern Miller.")

	New York.	Chicago.	Montreal.	Toronto.	Winnipeg.	London.	Liverpool.
Month.	F. O. B. New York.	F. O. B. Chicago.	Delivered to Retailers.	F. O. B. Toronto.	Delivered.	C. I. F. Quotation by Mills.	C. I. F. Quotation by Mills.
	per 196 lbs.	per 196 lbs.	per 196 lbs.	per 196 lbs.	per 196 lbs.	per 196 lbs.	per 196 lbs.
1912	\$	\$	\$	\$	\$	\$	\$
April.....	4 95-5 30	4 80-5 65	5 50-.....	5 19-.....	5 40-.....	4 68-.....	4 63-.....
May.....	5 40-6 85	4 90-5 20	5 60-.....	5 20-.....	5 50-5 60	4 94-.....	4 94-.....
June.....	5 13-5 45	5 00-5 40	5 60-.....	5 20-.....	5 50-5 60	4 76-.....	4 77-.....
July. . . . .	5 30-5 55	5 15-5 10	5 60-.....	5 20-.....	5 60-5 80	4 76-.....	4 76-.....
August.....	4 55-5 15	4 70-4 90	5 60-.....	5 20-.....	5 60-.....	4 51-.....	4 68-.....
September...	4 50-4 75	4 40-4 60	5 60-.....	5 20-.....	5 60-.....	4 68-.....	4 68-.....
October . . . .	4 25-4 45	4 25-4 50	5 60-.....	5 20-.....	5 60-.....	4 68-.....	4 59-.....
November. . .	4 30-4 60	4 40-4 70	5 60-.....	5 20-.....	5 10-.....	4 59-.....	4 63-.....
December. . .	4 10-4 35	4 30-4 40	5 20-.....	4 80-.....	5 10-.....	4 42-.....	4 42-.....
1913.							
January.....	4 20-4 40	4 15-4 40	5 20-.....	4 80-.....	4 90-.....	4 33-.....	4 33-.....
February. . . .	4 35-4 45	4 25-4 40	4 90-.....	4 80-.....	4 90-.....	4 25-.....	4 25-.....
March . . . . .	4 25-4 45	4 25-4 45	5 20-.....	4 80-.....	4 90-.....	4 42-.....	4 42-.....



SESSIONAL PAPER No. 15a

WHOLESALE QUOTATIONS PER BARREL FOR EIGHT VARIETIES OF NUMBER ONE APPLS EACH FORTNIGHT FROM SEPTEMBER 11, 1912, TO  
MARCH 26, 1913.  
GRAVENSTEIN.

Date.	Halifax.	Montreal.	Toronto.	Winnipeg.	Boston.	New York.	Chi. ago.	London. (Canadian).	Liverpool. (Canadian).	Glasgow. (Canadian).
1912.	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Sept. 11.....	1 75 - ..	.....	3 00 - ..	.....	2 50 - 3 00	2 25 - 3 00	.....	.....	.....	.....
" 25.....	1 75 - ..	.....	3 00 - ..	3 90 - ..	2 50 - 3 75	2 25 - 3 25	.....	.....	.....	.....
Oct. 9.....	1 75 - ..	3 50 - ..	.....	3 75 - ..	2 50 - 3 75	2 25 - 2 75	.....	2 67 - ..	3 65 - 4 50	4 50 - ..
" 23.....	.....	3 50 - ..	.....	3 75 - ..	2 50 - 3 75	2 00 - 2 75	.....	2 67 - 3 40	4 13 - ..	.....
Nov. 6.....	.....	3 50 - ..	.....	.....	2 50 - 3 00	.....	.....	.....	.....	.....

FAMEUSE.										
Sept. 11.....	.....	.....	3 25 - ..	.....	2 00 - 3 00	.....	.....	.....	.....	.....
" 25.....	.....	.....	3 25 - ..	.....	.....	2 00 - 3 25	2 50 - 2 75	.....	.....	4 74 - 4 86
Oct. 9.....	.....	4 50 - ..	3 25 - ..	.....	2 00 - 3 00	1 50 - 3 00	2 25 - 2 50	.....	4 13 - ..	3 89 - 5 00
" 23.....	.....	4 50 - 5 00	3 25 - ..	4 50 - ..	1 50 - 2 50	1 50 - 2 75	2 50 - 2 75	.....	3 46 - ..	3 89 - 4 25
Nov. 6.....	.....	4 50 - 5 25	3 50 - ..	.....	1 50 - 2 00	1 50 - 2 75	2 50 - 2 75	.....	3 89 - ..	.....
" 20.....	.....	5 50 - ..	3 50 - ..	4 50 - ..	1 50 - 2 00	1 50 - 2 50	2 50 - 2 75	.....	.....	2 79 - ..
Dec. 4.....	.....	4 50 - 5 50	3 50 - ..	.....	1 50 - 2 00	2 00 - 3 50	2 50 - 2 75	.....	.....	.....
" 18.....	.....	.....	.....	.....	1 50 - 2 00	.....	.....	.....	.....	.....
1913.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Jan. 1.....	.....	.....	.....	.....	.....	2 00 - 3 50	2 50 - 2 75	.....	.....	.....

GREENINGS.										
1912.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sept. 11.....	.....	.....	2 75 - ..	.....	.....	2 00 - 3 00	.....	.....	.....	.....
" 25.....	.....	.....	2 75 - ..	.....	.....	2 00 - 2 50	2 50 - 2 75	.....	.....	3 89 - 4 13
Oct. 9.....	.....	3 75 - ..	2 75 - ..	3 75 - ..	1 50 - 2 25	1 75 - 2 50	2 25 - 2 50	3 40 - ..	3 89 - 4 25	3 46 - 3 65
" 23.....	.....	3 25 - ..	2 75 - ..	3 75 - ..	1 50 - 2 25	1 75 - 2 75	2 25 - 2 50	3 04 - 3 65	3 65 - 3 83	3 77 - 4 07
Nov. 6.....	.....	3 50 - ..	2 75 - ..	3 75 - ..	1 50 - 2 00	1 75 - 4 00	2 50 - 2 75	2 67 - 2 92	3 65 - 3 95	3 77 - 4 13
" 20.....	.....	3 75 - ..	2 75 - ..	3 75 - ..	1 25 - 1 75	2 25 - 3 25	2 50 - 2 75	2 92 - ..	3 83 - 4 01	3 40 - ..
Dec. 4.....	1 50 - ..	.....	2 75 - ..	3 75 - ..	1 25 - 1 75	2 25 - 3 50	2 50 - 2 75	.....	1 88 - 3 83	.....
" 18.....	1 50 - ..	.....	3 00 - ..	4 00 - ..	1 25 - 1 75	2 25 - 3 50	2 00 - 2 50	3 52 - ..	.....	.....



WHOLESALE QUOTATIONS FOR APPLES—Continued.  
GREENINGS—Continued.

Date.	Halifax.	Montreal.	Toronto.	Winnipeg.	Boston.	New York.	Chicago.	London. (Canadian.)	Liverpool. (Canadian.)	Glasgow. (Canadian.)
1913.	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Jan. 1.....	1 50 - ..	3 50 - 4 25	.....	.....	1 25 - 1 75	2 50 - 3 50	2 00 - 2 50	.....	1 46 - 1 58	.....
" 15.....	1 50 - ..	3 50 - 4 25	3 00 - ..	3 75 - ..	1 50 - 2 00	2 50 - 3 00	3 00 - 3 25	.....	.....	.....
" 29.....	1 50 - ..	3 50 - 4 25	2 75 - ..	4 00 - ..	1 50 - 2 00	2 50 - 3 00	3 00 - 3 25	.....	.....	3 89 - ..
Feb. 12.....	1 50 - ..	2 00 - 2 50	2 75 - ..	.....	1 50 - 2 00	2 50 - 3 50	3 00 - 3 10	.....	.....	.....
" 26.....	1 50 - ..	2 00 - 2 50	2 75 - ..	.....	2 00 - 2 75	2 50 - 3 00	3 00 - 3 25	.....	3 28 - 3 40	.....
Mar. 12.....	1 50 - ..	3 00 - 3 50	2 50 - ..	.....	2 00 - 2 75	2 50 - 3 00	3 00 - 3 25	.....	.....	.....
" 26.....	1 50 - ..	3 00 - 3 50	2 50 - ..	.....	2 00 - 2 75	..... - 3 00	2 75 - 3 00	.....	.....	.....

KINGS.

1912.										
Sept. 11.....	.....	.....	3 50	.....	.....	.....	2 00 - 2 25	.....	.....	.....
" 25.....	.....	.....	3 50	.....	.....	2 25 2 75	2 25 - 2 75	.....	1 38 5 34	.....
Oct. 9.....	.....	3 75	3 50	.....	.....	.....	2 50 - ..	.....	.....	4 86 - 5 71
" 23.....	3 00	3 75	3 50	.....	2 50 2 75	2 00 2 50	2 50 - ..	3 89 4 38	3 89 4 74	4 50 - 4 74
Nov. 6.....	3 00	3 75	3 50	.....	2 50 2 75	2 00 2 50	2 50 - ..	3 65 3 89	3 16 4 19	4 25 - 4 62
" 20.....	3 00	4 00	3 50	.....	2 00 2 50	2 00 3 00	2 50 - 3 00	2 92 3 40	4 62 ..	3 65 - ..
Dec. 4.....	3 00	4 00	3 50	.....	2 00 2 50	2 00 3 00	2 50 - 3 00	.....	.....	.....
" 18.....	3 00	.....	4 00	4 50	2 00 - 2 50	2 00 - 3 50	2 50 - 3 00	3 52 - ..	.....	.....
1913.										
Jan. 1.....	3 00	4 00	.....	.....	2 50 - 3 00	2 00 3 00	2 50 - 3 00	3 65 - ..	2 43 - ..	3 40 - ..
" 15.....	3 00	.....	.....	4 25	2 50 - 3 00	2 75 - 3 25	3 00 - 3 25	.....	4 74 - ..	.....
" 29.....	3 00	.....	.....	4 00	2 50 - 3 00	2 75 - 3 25	3 00 - 3 25	.....	.....	.....
Feb. 12.....	3 00	.....	.....	.....	2 50 - 3 00	2 75 - 3 50	3 00 - 3 25	.....	.....	.....
Mar. 26.....	3 00	.....	.....	.....	2 50 - 3 00	2 75 3 25	3 00 - 3 25	.....	.....	.....
" 12.....	3 00	.....	.....	.....	2 50 - 3 00	2 50 - 3 00	3 00 - 3 25	.....	.....	.....
" 26.....	3 00	.....	.....	.....	2 50 3 00	2 00 - 2 75	2 75 - 3 00	.....	.....	.....







WHOLESALE QUOTATIONS FOR APPLES—Continued.

BEN DAVIS.

Date.	Halifax.	Montreal.	Toronto.	Winnipeg.	Boston.	New York.	Chicago.	London. (Canadian).	Liverpool. (Canadian).	Glasgow. (Canadian).
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
1912.										
Sept. 11. . . . .	.....	.....	2 00 -	.....	.....	.....	1 50 - 1 75	.....	.....	.....
" 25. . . . .	.....	.....	2 00 -	.....	.....	.....	1 50 - 1 75	.....	.....	.....
Oct. 9. . . . .	.....	.....	2 00 -	4 00 -	.....	.....	1 50 - 1 75	.....	.....	.....
" 23. . . . .	.....	.....	2 00 -	.....	2 00 - 2 50	.....	1 50 - 1 75	.....	.....	.....
Nov. 6. . . . .	.....	.....	2 00 -	.....	1 75 - 2 50	.....	1 75 - 2 25	.....	3 52 -	3 22 - 3 40
" 20. . . . .	1 50 -	.....	2 00 -	.....	1 50 - 2 50	.....	1 75 - 2 00	2 92 - 3 16	2 61 - 2 92	2 85 - 3 40
Dec. 4. . . . .	1 50 -	.....	2 00 -	.....	1 50 - 2 50	.....	1 75 - 2 00	2 92 -	2 92 -	2 61 - 3 34
" 18. . . . .	1 50 -	.....	2 00 -	.....	1 50 - 2 50	.....	1 75 - 2 00	2 92 -	2 67 - 2 73	2 55 - 2 67
1913.										
Jan. 1. . . . .	1 50 -	4 25 -	2 00 -	.....	1 50 - 2 00	1 50 - 2 25	2 00 - 2 25	2 43 - 2 67	2 43 - 2 67	2 43 - 2 55
" 15. . . . .	1 50 -	.....	2 00 -	.....	1 50 - 2 00	1 75 - 2 50	2 25 - 2 50	3 04 -	3 16 - 3 34	.....
" 29. . . . .	1 50 -	4 25 -	2 00 -	.....	1 50 - 2 00	1 75 - 2 50	2 25 - 2 50	2 79 - 3 16	3 52 - 4 13	3 22 - 3 40
Feb. 12. . . . .	1 50 -	.....	2 00 -	.....	1 50 - 2 00	1 75 - 2 75	2 25 - 2 50	3 04 - 3 16	2 93 - 3 10	3 40 - 3 58
" 26. . . . .	1 50 -	.....	2 00 -	.....	1 50 - 2 00	1 75 - 2 50	2 50 - 2 60	2 79 - 3 16	2 43 - 2 79	.....
Mar. 12. . . . .	1 50 -	3 00 -	2 25 -	3 50 -	1 50 - 2 00	1 75 - 2 50	2 50 - 2 75	3 16 -	2 92 - 3 22	2 92 - 3 28
" 26. . . . .	1 50 -	3 00 -	2 50 -	.....	1 50 - 2 00	1 75 - 2 25	2 25 - 2 75	2 92 - 3 16	3 16 - 3 40	3 16 - 3 28







APPENDIX III.

REPORT OF A. McNEILL, CHIEF, FRUIT DIVISION.

SIR,—I have the honour to present herewith the report of the Fruit Division for the year ending March 31, 1913.

THE STAFF.

A large increase in the number of inspectors during the season 1912-13 enabled a distribution of the staff in districts of workable size. Up to this year the inspectors had, indeed, been assigned to districts, but the districts were so large that complete supervision was impossible. For the purposes of inspection this season, the country was divided into five districts. Each district had a chief inspector in charge of the inspectors in the subdivisions as noted below:—

*District 1, Maritime Provinces.*

G. H. Vroom, Chief Inspector.

Halifax... ..	A. S. Alcorn. W. C. Healy. Stuart Dimock. Geo. Akins. W. E. Anderson. A. T. Morse.
Annapolis Valley... ..	Wm. Bishop. F. B. Westcott.
Prince Edward Island... ..	C. M. Williams.
New Brunswick... ..	S. L. Peters.

*District 2, Quebec and Eastern Ontario*

W. W. Brown, Chief Inspector.

Quebec City... ..	E. Bedard.
*Montreal... ..	F. L. Dery. E. H. Wartman. F. T. Curley. J. A. Jones.
Lake Ontario Counties... ..	Wm. McCullough. Wallace McQuoid. Wm. Armour.
Ottawa Valley... ..	C. H. Snow.

*District 3, Western Ontario*

R. R. Waddle, Chief Inspector.

Toronto... ..	W. G. Smith.
Hamilton to St. Catharines... ..	F. L. Gabel.
St. Catharines to Niagara... ..	Byron Honsberger.

\* At the close of navigation, the Montreal staff is moved to Lake Ontario points.



## SESSIONAL PAPER No. 15a

*District 3, Western Ontario—Continued.*

Lake Erie Counties...	Geo. Connor.
Inland Counties...	S. R. Wallace.
	Moses Unger.
Lake Huron Counties...	A. E. Durnin.
Georgian Bay...	G. B. Carnahan.
Sault Ste. Marie...	Geo. Honsberger.
Lake Superior...	Wm. Stewart.

*District 4, Prairie Provinces.*

C. W. Baxter, Chief Inspector.

Winnipeg...	Jos. Carman.
	Corbin Weld.
Brandon...	F. H. Steele.
Regina...	Geo. Graff.
Saskatoon...	J. H. Aulseybrook.
Medicine Hat...	Frank Metcalf.
Calgary...	M. P. McNeill.
Lethbridge...	J. W. Clement.
Edmonton...	A. H. Flack.

*District 5, British Columbia.*

R. G. L. Clarke, Chief Inspector.

Vancouver Island...	Henry Callow.
Vancouver City...	D. M. Robertson.
Interior...	A. M. Fletcher.

*Customs Officers Acting as Dominion Fruit Inspectors.*

Nelson, B.C...	J. G. Bunyan.
Grand Forks, B.C....	W. J. Cook.
Prince Rupert, B.C...	J. H. McLeod.

Almost since the inception of the Act, special attention has been given to box packing. This was systematized during the past season by placing it in charge of Mr. P. J. Carey, who was chief fruit inspector for Western Ontario until September 1, last. Mr. Carey's large experience in the packing of fruit and his ability as a speaker made him particularly valuable as an instructor. In order to unify the box packing methods throughout the Dominion, Mr. Carey was sent out to British Columbia, and visited a number of the box packing schools being held under the auspices of the Provincial Department of Agriculture in March.

I regret to have to record the death of Mr. Geo. Graff, temporary inspector at Regina, while engaged on active duty. His death occurred, October 6, after a short illness (typhoid fever). Arrangements were made by which the work at Regina was carried on by Inspector J. W. Clement.

Mr. D. M. Robertson, for a number of years permanent fruit inspector in British Columbia, resigned from the staff at the end of the active fruit season.



## INSPECTION STATISTICS.

The following table gives comparative statements of the number of lots inspected, and the number of packages inspected for the seasons 1908-09, 1909-10, 1910-11, 1911-12 and 1912-13:—

Variety.	No. of Lots. Inspected.	No. of pkgs. in Lots Inspected.	No. of pkgs. Inspected.
1908-09.			
Apples.....Brls.	5,940	682,657	42,223
".....Boxes.	248	100,792	2,701
Pears....."	88	54,150	7,924
Peaches....."	91	140,976	16,065
Plums.....Baskets.	54	16,505	1,474
Tomatoes....."	53	11,381	779
Small fruits.....Quarts.	863	1,184,651	154,874
1909-10.			
Apples.....Brls.	7,736	859,572	63,232
".....Boxes.	902	157,939	7,363
Pears....."	248	41,459	2,738
Peaches....."	410	60,248	3,817
Plums.....Baskets.	264	62,883	4,257
Tomatoes....."	149	50,043	3,241
Apricots.....Boxes.	11	12,495	481
Small fruits.....Quarts.	2,491	2,310,264	240,751
1910-11.			
Apples.....Brls.	4,527	360,768	26,890
".....Boxes.	1,347	234,182	9,829
".....Baskets.	171	17,551	10,393
Pears.....Boxes.	371	40,681	2,750
Peaches....."	11	2,269	36
".....Baskets.	383	70,564	5,932
Tomatoes....."	56	6,570	601
Plums....."	189	50,575	5,144
Small fruits.....Quarts.	1,502	568,510	155,048
1911-12.			
Apples.....Brls.	13,548	1,085,300	67,706
".....Boxes.	1,235	162,249	10,178
Pears....."	389	82,252	2,655
Peaches....."	38	437	268
".....Baskets.	365	34,606	2,864
Plums....."	336	88,894	7,554
Tomatoes....."	66	48,530	2,012
Small fruits.....Quarts.	2,120	2,729,143	293,591
1912-13.			
Apples.....Brls.	18,457	1,321,440	80,102
".....Boxes.	1,099	195,968	11,132
".....Baskets.	119	16,249	2,719
Crab apples.....Boxes.	62	12,186	695
".....Baskets.	17	1,395	660
Pears.....Boxes.	272	36,356	2,202
Peaches....."	65	25,592	1,557
".....Baskets.	121	18,837	2,139
Plums....."	186	67,751	7,254
Tomatoes....."	264	39,174	6,940
Small fruits.....Quarts.	1,187	2,264,559	172,945



## SESSIONAL PAPER No. 15a

## PROSECUTIONS.

The following is a list of those who have been convicted, during the season 1912-13, of violation of the Inspection and Sale Act, Part IX:—

*Nova Scotia—*

Percy D. VeeBaker.....	Melvorn Square.
R. H. Banks.....	Waterville.
C. R. Bill.....	Billtown.
R. Bligh .....	Lakeville.
W. T. Borden.....	Tupperville.
J. Bowlby .....	South Tremont.
J. H. Bowles.....	Brooklyn Station.
H. Burke.....	Windsor.
N. E. Caldwell.....	Grand Pré.
Carl Church.....	Falmouth.
O. G. Cogswell.....	Port Williams.
Andrew Coldwell, sr.....	Gaspereaux.
Wallace Eldridge .....	Avon Valley
C. S. Fitch.....	Wolfville.
W. Frank .....	Falmouth.
John Frasher .....	Centre Granville.
O. N. Fullerton.....	Hantsport.
F. L. Gertridge.....	Gaspereaux.
H. Gormley.....	Windsor.
V. E. Griffin.....	Port Williams.
S. W. Kidston.....	"
E. R. Lunn.....	Falmouth.
J. A. McDonald.....	Steam Mills.
A. C. Murphy.....	Port Williams.
C. E. Palmer.....	Tremont.
P. D. Phinney.....	Granville.
B. O. Rockwell.....	Lakeville.
E. T. Rockwell.....	"
H. N. Rockwell.....	"
Rooney Bros. ....	Windsor.
G. Spence .....	St. Croix.
H. A. Spence.....	"
R. S. Spicer.....	Berwick.
T. H. Walker.....	Kingston.
E. B. Woodward.....	Lakeville.
A. S. Woolaver.....	Newport.

*Quebec—*

Geo. R. Clarke.....	Roxham.
D. Daignault .....	Henrysburg Centre.
Geo. Desparais .....	Chateauguay.
J. T. Goodfellow.....	Woodlands.
W. E. Lefebvre.....	Starnesborough.

*Ontario—*

J. A. Brouse.....	Ottawa.
D. Cantelon .....	Clinton.
J. N. Clendinnin.....	Murray.
R. Collacott .....	Bowmanville.
J. & H. Coyle.....	Colborne.
John Coyle & Co.....	"
Wilbert Davey .....	Precious Corners.
J. L. Denike.....	Cressy.
Durham Fruit Growers' Association.....	Port Hope.
Foster & Cole.....	Bowmanville.
French & Stein.....	Chatham.
H. Gregory .....	South Gower.
H. F. Grimmon.....	Port Milford.
Frank Huff .....	Westlake.
J. P. Hughes.....	Picton.
George Innis .....	Peterborough.
Kidd & Sinclair.....	Mount Brydges.
M. Laughlin .....	Mountain.
H. Maloof & Co.....	Ottawa.
Jas. Marchen & Co.....	Tweed.
Sam. Marchen and A. Badgely.....	"
Norman Martin .....	Port Hope.



Ontario—Continued.

G. H. McCullough.....	Brighton.
G. N. McKenzie.....	Waupoos.
J. C. Norsworthy.....	Ingersoll.
Oshawa Fruit Growers' Association..	Oshawa.
Geo. Palmer .....	Port Hope
Wm. Peck .....	Murray.
W. W. Peck.....	Albury.
W. H. Phillips.....	Frankford (two convictions.
P. Shannon .....	Halston.
Thos. Skinner .....	Mitchell.
M. Sprung .....	Mountain View.
E. L. Sutherland.....	Embro.
John Thompson .....	South Bay.
W. H. Osborne.....	Bowmanville.
Jas. Vair .....	Barrie.
Hermon Weese .....	Rednersville.

Saskatchewan—

Early Fruit Company.....	Saskatoon.
Northern Fruit Company.....	"

Alberta—

Brown Fruit Company.....	Edmonton.
Good Company.....	Lethbridge.
McPherson Fruit Company.....	"
Plunkett & Savage.....	"
Plunkett & Savage.....	Edmonton.
Royal Fruit Company.....	"
Stoddard Fruit Company.....	"
W. Wilkins .....	"

British Columbia—

Vernon Fruit Company.....	Vernon.
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MEETINGS.

As in former years, the permanent inspectors were able, after the close of the active fruit season, to spend some time attending meetings of fruit growers and assisting at fall fairs and exhibitions.

Members of the staff assisted at meetings as follows:—

Prince Edward Island..	42
Nova Scotia..	48
New Brunswick..	70
Quebec...	11
Ontario..	35
British Columbia..	1

SPECIAL SERIES OF MEETINGS IN NOVA SCOTIA.

Toward the end of June, I went down to Nova Scotia and in conjunction with Mr. A. E. McMahon, attended a series of meetings, held under the auspices of the United Fruit Companies, Limited, of Nova Scotia, as follows:—

Berwick..	June 25
Centre Clarence..	" 26
Bridgetown...	" 26
Lawrencetown..	" 27
Paradise.....	" 27
Kingston..	" 28
Aylesford..	" 28
Port Williams...	July 2
Wolfville..	" 3
Falmouth..	" 3



## SESSIONAL PAPER No. 15a

The subject that was uppermost in the minds of the fruit growers was the completion of the organization of a central selling association for the local co-operative societies of Hants, Annapolis and Kings. This association has since been incorporated as the United Fruit Companies, Limited, of Nova Scotia.

The fruit growers of the valley, through their local associations, had a practical demonstration of the value of co-operation. They had, also, ample opportunity for noting the weak points of isolated associations, but the remedy was not quite clear. Private interests were strongly opposed to any closer organization. Men with large capital found that the local associations served a very useful purpose in their business by collecting large quantities of well packed fruit in convenient lots to suit their needs, and they were able and willing to pay an advanced price for this fruit, and had there been no other consideration than simply the immediate sale of fruit, it is probable that the organization would have gone no further. The promoters of the central association, however, had larger views in mind. They felt that to leave the associations as they were, even though they were dealt with fairly by the men who controlled the buying at the present time, offered no security for others not so scrupulous who might at any time appear upon the scene.

There was also the consideration that no one of the associations had a sufficiently large amount of fruit to impress a distant market. It was felt that there was room for expansion in the markets of the Northwest. It was also argued that there were certain abuses in the trade in Great Britain that might be corrected, and the preliminary to any work looking to the improvement of the industry was the organization of as many fruit growers as possible into the central association. They had further schemes in mind, too, namely, the development of distributive co-operation whereby orchard and other staple supplies might be bought in wholesale quantities, not only at a lower price but so as to effect many economies.

It is needless to say that there was much opposition to almost every phase of the business. Private dealers attended the meetings and pointed out the advantages of the present organization and system of doing business. The timid among the fruit growers dreaded branching out into anything new, and were inclined to perpetuate the existing condition of things, with the improvements made by the local associations. There were also those who honestly doubted the ability of a single organization to handle so large a quantity of fruit as the entire output of the valley.

From the fact that Mr. McMahon had been intimately associated with the tentative organization of the previous year, that had handled something like 400,000 barrels of apples, I was relieved of the necessity of making any particular local references on what had been done in Nova Scotia, and confined myself exclusively to the general principles that had been worked out in other places and were distinctly applicable to the conditions in Nova Scotia. I was able to quote from the experience of the California Fruit Exchange, showing that there was no safety in a fruit selling association that did not control the fruit from the time it left the orchard until it was in the hands of the consumer. There was, also, the undeniable argument that the difficulties of selling diminished rather than increased with the quantity of fruit to be handled. I pointed out, also, by numerous instances not only in the fruit industry but in other lines, that the day was coming when there would be need for special advertising in the old markets and the exploiting of new markets, and that work of this kind would never be carried on unless the expense of it could be placed upon the whole body of fruit growers, a thing that was impossible without a central association.

One view of co-operative membership appeared to be very persistent in the valley, namely, that which enabled a member to join an association, at the same time retaining practical control, so far as selling was concerned, of his fruit. I most emphatically opposed this idea and pointed out, by numerous examples in the history of co-operative selling associations, that this view could not for a moment be entertained. If the central association was to perform its duties with success, it must have abso-



lute control of the fruit of its members, and I strongly recommended that a clause be placed in the by-laws making it obligatory on all members to assign the selling of all their fruit to their associations.

Mr. McMahon was able, in a very practical way, to give illustrations of the advantages of a central association. Perhaps one of the most telling incidents was in connection with the purchase of fertilizer. The sales of fertilizer in Nova Scotia amount to an enormous sum in the aggregate. Practically all the larger fertilizer companies of eastern America maintain agents throughout the valley. It is understood, of course, that the cost of keeping these agents must be added to the price of fertilizer. In order to economize, therefore, the central association attempted to deal directly with the principals in the purchase of fertilizer. The manager first made overtures to the agents, but did not receive the encouragement in the matter of price that he thought he deserved. He then proceeded to Boston, the headquarters of most of the fertilizer companies doing business in the valley. On his arrival, he visited manager after manager, but all had the same story to tell: they could not sell fertilizer to him except through their accredited agents in the valley. He was finally compelled to go to New York before he could find a company that would sell to him. He then made a purchase of 2,000 tons upon which, after all expenses were paid, there was a saving of \$3 per ton.

The sequel of this incident in the business of 1911 culminated just before the series of meetings we were attending. When the manager of the central association was making arrangements for the season of 1912, he received numerous telegrams from the principals of the Boston fertilizer companies intimating that they would be glad to meet him at any time and place he designated. The attitude of the fertilizer companies had been completely changed; but no such result would have been obtained had it not been for the power of the central association. Unorganized fruit growers would have had no chance against the organized forces of the fertilizer companies.

This and several other similar incidents served to convince practically all the associations in the valley that a central organization was a necessity.

While in Nova Scotia I was able to spend a day, June 21, at the Agricultural College, Truro, and addressed a meeting attended by a train-load of excursionists from the fruit sections of the province. I spoke particularly with reference to the infestation of the San José Scale, noting the necessity for stamping it out while yet in the incipient stage. I was able to call attention to the experience of Ontario in this connection. Some time was also spent in drawing attention to the desirability of introducing mixed farming, with orcharding as the main feature.

#### BETTER FARMING SPECIAL.

Last year Mr. Carey devoted considerable time to assisting in connection with the 'Better Farming Train' equipped by the Ontario Department of Agriculture. This year the New Brunswick Government equipped a similar train and asked that our fruit inspector for the province, Mr. S. L. Peters, accompany the train in order to assist in the work. Meetings were addressed at the following places:—

Harvey Station,  
Welsford,  
West St. John,  
St. George,  
Roix Road,  
Moore's Mills,  
McAdam Junction,  
Debec Junction,  
Hartland,  
Bath,

Edmundston,  
Grand Falls,  
Aroostock Junction,  
Millville,  
Keswick,  
Durham,  
Boiestown,  
Blackville,  
Millerton,  
Memramcook,



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St. Leonards,	Salisbury,
Limestone,	Sussex,
Perth Junction,	Hampton,
Zeland,	Rogersville,
Fredericton,	Bathurst,
Cross Creek,	Charlo,
Doaktown,	Campbellton,
Fredericton Junction,	Chatham,
Westfield Beach,	Moncton,
Musquash,	Petitcodiac,
St. Andrews,	Norton,
St. Stephen,	Harcourt,
Watt Junction,	Barnaby River,
Canterbury,	Nash's Creek,
Woodstock,	Dalhousie Junction.
Florenceville,	

In his report in connection with this work, Inspector Peters writes:—

‘The great desire manifested by visitors to learn everything in connection with successful fruit growing, was the best possible evidence of the interest this industry has awakened in New Brunswick. Everybody seemed anxious to grow apples, and the entire staff of the ‘Better Farming Special’ was none too large to answer the inquiries made by visitors. It is certainly safe to say that much valuable information was imparted during our stay at each place. During our tour, fifty-five places were visited, with lectures at each place. The total attendance at these meetings was 28,215. The experiment proved an entire success, and its repetition would be gladly welcomed by the people.’

ORCHARD MEETINGS—QUEBEC.

A series of orchard meetings was arranged at the following places in Quebec, Inspector F. L. Dery giving timely instruction in pruning, grafting, spraying and general orchard culture:—

St. Bruno.. . . .	April 29
Laprairie.. . . .	“ 30
St. Remi.. . . .	May 1
St. Michel.. . . .	“ 2
Sherrington.. . . .	“ 3
St. Joseph du Lac.. . . .	“ 6
Ste. Scholastique.. . . .	“ 7
St. Augustin.. . . .	“ 8
Ste. Therèse.. . . .	“ 9
St. Jerome.. . . .	“ 10

THE WORK OF THE INSPECTORS BY PROVINCES.

Perhaps a better view of the work of the staff may be obtained by making extracts from the reports of the different inspectoral districts. There is usually some special feature in each that makes this arrangement desirable.

PRINCE EDWARD ISLAND.

In the spring of 1912, Mr. C. M. Williams was appointed on the permanent staff and detailed for work in Prince Edward Island. Being a graduate of Macdonald College, Mr. Williams was well fitted to conduct fruit demonstrations during the intervals when his duties as inspector were not pressing, and in other ways to assist



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in promoting the fruit industry of the Island. During the summer months, he visited orchards upon the Island and addressed a number of meetings, giving demonstrations in the preparation of the ordinary spray mixtures, such as the Bordeaux and lime sulphur. This work was done after consultation with the Provincial Commissioner and Provincial Secretary for Agriculture. Mr. Williams' personal visits were much appreciated, and no doubt will result in increased care for the orchards and the planting of new orchards for which the Island is eminently fitted.

Mr. Williams was also able to assist in the work of the P. E. I. Co-operative Fruit Company and, at his suggestion, co-operative spraying was done in the neighbourhood of Montague, Kensington and Margate. The orchardists were charged 25 cents per hour and 2 cents per gallon for the spray mixture, and were also expected to assist in the work and board the men engaged in the operation.

Quite late in the spring three orchards were selected as demonstration orchards. Later, however, it was found that only two of these, that of Mr. Alexander, Cardigan, and Mr. Schurman, Central Bedeque, were suitable for the purpose. Owing to the lateness of the season, of course nothing could be done but prepare the orchards for this season.

During July and August, Mr. Williams visited strawberry growers, noting the varieties and systems of cultivation. The climate and soil of the Island is admirably suited for strawberry growing.

When the harvesting of large fruits commenced, Mr. Williams visited orchards, giving instructions in packing in barrels and boxes and, in co-operation with the local department, assisted in finding a market for the early apples particularly. This work was quite successful.

In October the packing centres were confined to Charlottetown, Montague and Kensington. It was advertised that Mr. Williams would be at these places Mondays, Wednesdays and Fridays, respectively, to give instructions regarding the grading and packing of apples in barrels and boxes and the marking of packages as required by the Inspection and Sale Act. This work was carried to the extent of packing a considerable quantity of fruit for market, but the success of it was questionable, owing to the difficulty of securing fruit that had not been severely injured in the handling between the orchard and the packing house.

With reference to the inspection work, it may be noted that in the early part of the season the inspection had to do with early fruit that was being exported or sent to the mining towns of Nova Scotia. That there is a marked improvement in the quality and packing of this fruit is perfectly true, yet according to Mr. Williams' report there is still room for great improvement, although there were no convictions for violation of the Inspection and Sale Act in Prince Edward Island. The faults of the fruit are those of a district new to the business; the fruit is sometimes over-ripe, nearly always poorly graded and quite frequently improperly packed. When the shipments from the Island arrived in the Old Country they were sold in competition with the choicest apples from other parts of Canada and from the United States, and consequently brought a much lower price than the quality of the fruit deserved had it been properly treated. The Prince Edward Island Co-operative Fruit Company is a potent factor for improvement in all lines of fruit growing. As the quantity of fruit becomes larger and the individual interests are sufficient to enlist more attention, it is not too much to say that Prince Edward Island will find her fruit growing industry an exceedingly valuable asset.

Mr. Williams assisted in judging fruit exhibits at Summerside, Charlottetown and Georgetown. He held twelve demonstration apple packing meetings: three at Charlottetown, five at Montague and four at Kensington; and was able to attend and address general fruit meetings at the following points: Murray Harbour, Hopefield, Cardigan, Brudenell, Brooklyn, Lower Montague, Eldon, Pinette, Belle River, Wood Islands, Scotchfort, Savage Harbour, St. Margarets, Rollo Bay, Souris, Summerside, Elmira, Mount Albion, Cornwall, Searletown, Murray River, Georgetown, Tra-



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cadie and Mount Carmel. In addition, Mr. Williams assisted at the Short Course in Agriculture, held in Charlottetown, January 27 to February 7, and at farmers' picnics at the Provincial Experimental Farm, July 15, 17 and 20.

*Nova Scotia.*

The enforcement of Part IX. of the Inspection and Sale Act in Nova Scotia is in charge of Mr. G. H. Vroom. Several unusual features presented themselves this year. The season of 1912 was exactly the opposite with reference to temperature and precipitation to that of 1911, and many people were induced, by their experience of 1911, to relax vigilance in the matter of spraying. As the season actually developed, the conditions could not have been more favourable for fungous diseases and insect pests. Consequently, while the crop was large, the quality was very much below the average. In his report, Mr. Vroom notes that at least 50 per cent of the crop was fit to grade only No. 3. Continuing he says: 'The apples were never so well packed in Nova Scotia as they were this season, and this condition of affairs is responsible for such a large quantity of No. 3's being shipped. I suppose 300,000 barrels of No. 3 Nova Scotian apples have found their way into the markets during the past season. These would probably net to the grower, at the most, an average of 25 cents, and my opinion is that if 100,000 of the best had been put upon the market, and the remaining 200,000 fed to stock, it would have been just as well for the country and the apple industry generally.'

The staff under Mr. Vroom's control was placed to the best advantage so as to have all parts of the Annapolis Valley covered and at the same time leave a sufficient force on the docks at Halifax to examine fruit being loaded on board ship. It was soon discovered that the work of the men in the valley was largely educational. Fortunately the co-operative associations were fairly well established and contributed materially to the very careful grading which was the feature of the year in Nova Scotia.

Mr. Vroom reports that the railway and steamship companies have handled the fruit with care, and that the thermograph records showed uniform and safe temperatures while crossing the ocean.

Mr. Vroom spent some time during the summer working under the direction of the Entomological Division of the Experimental Farms Branch. He inspected upwards of 200,000 trees, shrubs and bushes imported from Germany, France, England, Ireland and the United States.

Mr. Vroom also reports upon the labour problem, always a serious question in the apple districts on account of the large amount of extra work during the packing season. He says: 'At present little packing is done in the orchards. All available help is concentrated on getting the fruit off the trees and into the fruit houses, where it is packed for market. Nova Scotia is fortunate in having several sources upon which to draw for this large extra amount of labour. Men and boys and, in some cases, women and girls, come from the outside sections where apples are not grown; fishermen from the south shore are available, and a large number of men from the city of Halifax can be secured. The matter of securing help is organized by the United Fruit Companies, Limited, of Nova Scotia, so that it practically forms a labour exchange at this season for the whole valley. The wages paid average \$1.75 per day and board for men, and from \$1 to \$1.50 for women and boys.'

Mr. Vroom also reports that the supply of cooper stock this year in Nova Scotia is fairly ample and that, unless an unusual crop should develop, no shortage of barrels will be experienced.

Mr. Vroom was able to judge fruit at exhibitions at Sydney, Bridgetown and Bear River, and addressed twenty-three different fruit meetings during the year.



*New Brunswick.*

The permanent inspector in New Brunswick, Mr. S. L. Peters, is able to give considerable time to educational work without at all neglecting his inspection duties. The excellent conditions in New Brunswick for apple growing have been recognized for some time. Progress, however, has been slow. During the past year, Mr. Peters has attended a large number of orchard meetings, giving demonstrations in all lines of orchard culture, placing particular emphasis upon spraying. As noted elsewhere, his work in connection with the 'Better Farming Special' was much appreciated.

*Quebec.*

The Province of Quebec does not present any special problems with reference to inspection. Though the number of inspectors employed in the province, notably at Quebec and Montreal, is large, they are not of course engaged with the products of the province to any great extent. Apple growing in Quebec has been for many years practically at a standstill, if not, indeed, actually declining. The old Fameuse orchards that perhaps did as much as anything else to make the province famous for its fruit, are rapidly disappearing, and new orchards are not being planted in any great numbers to take their place. The small fruit industry, according to the reports of our fruit crop correspondents, is not increasing. Scarcity of labour and poor transportation facilities are the alleged reasons for this.

During the shipping season an inspector is stationed in the city of Quebec and has an opportunity, not only of examining the apples going on board ship for export, but of doing much valuable work among the fruit merchants of the city. He also is able to visit some of the large towns in the vicinity.

Mr. F. L. Dery, a permanent inspector, with headquarters at Montreal, is also able to visit the towns and cities of the province, endeavouring particularly to see the large stocks of apples imported from the other provinces for winter use.

*Ontario.*

The variety of soil and climate and consequently of fruit production renders the inspection work somewhat more complicated than in the other provinces. Mr. W. W. Brown has charge of the work in the important apple district north of Lake Ontario. During the fall he also directs the work at Montreal and details the staff for duty on the docks. At the close of navigation the Montreal inspectors, with the exception of Mr. Dery, who is permanently located there, are moved to points along the north shore of Lake Ontario, where large lots of apples are stored to be repacked during the winter months. A decided improvement has taken place in the work both in the orchards and in the warehouses. The inspectors report a better class of labour and a much more intelligent appreciation of the value of the Inspection and Sale Act. There are a large number of evaporators and canning factories in the district, using apples as well as other fruits.

Mr. R. R. Waddle has charge of the staff of inspectors covering Ontario west of Toronto. The Georgian Bay district, like the district north of Lake Ontario, is devoted almost exclusively to winter apples, though not so large in extent. In addition, plum growing is quite a feature. An inspector is located in this district during the fruit season, with headquarters at Meaford.

The Niagara district is devoted almost exclusively to small fruits and tender tree fruits. It has been found necessary to give considerable attention to small fruits. Close oversight is also kept of the size of packages inasmuch as many of the larger box factories are located in the neighbourhood. The large quantity of fruit shipped from almost every station makes examinations at the shipping point very convenient, and a large proportion of the work is done in this way.



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Western Ontario is an apple growing district, with a comparatively small output of tender fruits in the south. The inspectors report a decline in the apple industry, except in a few localities.

*Prairie Provinces.*

District 4 (Manitoba, Saskatchewan and Alberta) presents a somewhat different problem in the enforcement of the Inspection and Sale Act from any of the other districts. In the other districts, for the most part, the inspectors are engaged in examining fruit at the point of production or near it or on its way to market, and there are few complications of any sort. In the case of the Prairie provinces, things are reversed. The fruit is being examined at the point of consumption. Little fruit is produced within the district, and the products of all the fruit producing provinces are met here with importations from the United States. The Act did not make specific provision for the marking of foreign fruit. This and the problem of the time limit since the packing was done, provide a wide range for the discretion of the inspectors. The inspection is likely to be still further complicated by the claims and counter claims between buyers and sellers, which must, if they come to court, be settled by civil suit, and in which it is desirable that the inspectors should take no part.

Mr. C. W. Baxter was placed in charge of the work in this district, and proceeded to Winnipeg early in July. Taking all things into consideration, it was decided that Winnipeg would furnish the best headquarters from which the work could be directed. Mr. Baxter, who was thoroughly familiar with the fruit trade in eastern Canada, took occasion, soon after his arrival in the Northwest, to visit the fruit sections of British Columbia, where he had an opportunity of meeting many of the fruit growers, which contributed no doubt to a better knowledge of the mode of enforcing the Inspection and Sale Act. The difference in the size, colour and general appearance of the same varieties grown in the different provinces introduces a feature difficult to cope with. It is satisfactory to note, however, that these difficulties were for the most part overcome. Mr. Baxter had charge of nine inspectors who were placed in subdistricts, having headquarters as follows:—

Winnipeg,  
Winnipeg district,  
Brandon,  
Regina,  
Saskatoon,

Medicine Hat,  
Lethbridge,  
Calgary.  
Edmonton.

These districts were allocated, not strictly upon municipal or provincial boundaries, but rather by the convenience with which the different small cities and towns could be reached from the subdistrict headquarters. Even with these subdivisions, the territory covered by each inspector was too large to permit of frequent visits. In this connection, Mr. Baxter says in his report:—

‘It is not necessary, however, to cover these districts very often, owing to the manner in which the fruit is sold and distributed. In the case of small fruits, it can all be seen at central points, with the exception of a few places outside where carloads are placed and distributed. The conditions in regard to apples are altogether different, almost every town being used as a distributing point, so that when this fruit is moving freely inspectors must necessarily cover considerable ground. The city of Winnipeg, with its large population and as the central distributing point for the prairies, requires a resident inspector, making it necessary to have another inspector for the district about Winnipeg, south to Fort Francis and Boissevain, west to Portage la Prairie, north to Dauphin and east to Keewatin and Kenora. Conditions somewhat similar to those of Winnipeg exist in Calgary, recognized by the Pacific Coast fruit growers as the chief distributing point for the middle west.



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Here the resident inspector devotes all his time to city work during the rush season, the district work during this time being assigned to the Lethbridge and Edmonton temporary inspectors.'

The fruit of British Columbia this season was marketed almost exclusively in Alberta and Saskatchewan. Owing to the enormous crop of fruit in the Pacific coast, United States and the very large crop in British Columbia, conditions presented themselves that were quite different from those of any other year, and there was much misunderstanding of actual conditions, especially among the growers of British Columbia. It was deemed advisable, therefore, that Mr. Baxter, having had the experience of practically the whole shipping season in the markets of the Northwest, should attend the annual meeting of the British Columbia Fruit Growers' Association in Victoria, January 5, 6 and 7. He addressed the Association on the Inspection and Sale Act, Part IX, as it affects British Columbia fruit in the prairie markets, and explained the serious difficulties that presented themselves. There was considerable discussion of the administration of the Act, resulting from want of appreciation of the actual conditions. Mr. Baxter did much to explain these misunderstandings, and to point out where the real difficulties of the fruit growers lay.

The main misunderstanding was with reference to the marking of imported fruit, for which no specific provisions had been made in the original Fruit Marks Act nor in the codification under the Inspection and Sale Act. The difficulty had been met in former years and was met practically last year by insisting upon the importers of fruit placing their name and address upon the package, thus becoming responsible for the proper grading and marking of the fruit. There was, of course, no distinct provision in the law for this, but it had the force of law from the fact that section 321 of the Act makes it an offence to *sell* fruit that is not properly marked, so that the merchants were held under that clause, and this arrangement worked satisfactorily for several years. The following circular has been issued, from time to time for several years, to the merchants and importers of the prairie provinces:—

#### DEPARTMENT OF AGRICULTURE.

##### BRANCH OF THE DAIRY AND COLD STORAGE COMMISSIONER.

##### TO FRUIT IMPORTERS AND COMMISSION MERCHANTS.

'Importers of fruit are again warned that the Inspection and Sale Act, referring to the grading and packing of fruit and the size of fruit packages, will be strictly enforced.

'Importers of foreign fruit will be held strictly responsible for the packing, the size and marking of fruit packages.

'It is required that there shall be upon every closed package of imported fruit, the name and address of the importer, the variety of the fruit and its grade (section 320).

'The importer will be held responsible, also, in the case of violation of section 321.

'Copies of the Inspection and Sale Act, Part IX (The Fruit Marks Act) may be had, free, on application to the Fruit Division, Ottawa.

'J. A. RUDDICK,  
'Commissioner.'

'A. MCNEILL,  
'Chief, Fruit Division.'

The misunderstanding originated largely, no doubt, from the fact that this notice was not sent to the fruit growers although it was published in the newspapers. The average fruit grower, therefore, presumed that there was no provision for the marking and inspection of imported fruit. That no misunderstanding of this sort may arise in future, it is extremely desirable that an amendment be incorporated in



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the Inspection and Sale Act, making it obligatory that importers mark and grade the fruit, taking the place of the original packers.

In 1911, Nova Scotia sent considerable fruit to the Northwest. It was the first time Nova Scotian fruit growers had met the competition of British Columbia and the States of Washington and Oregon, and it left the question as to whether Nova Scotia could compete successfully or not in some doubt. In 1912 a much smaller quantity of Nova Scotian fruit reached the Northwest markets for several reasons, the chief of which was that the returns from the sales of 1911 had not been altogether satisfactory. A second reason was that the Nova Scotia shippers did not have fruit enough of the brand required by this market. Sufficient fruit arrived, however, to be a feature on the market, and it was in keeping, therefore, that Mr. Baxter should be asked to attend the annual meeting of the Nova Scotia Fruit Growers' Association, Middleton, January 28, 29 and 30, where he gave an address on 'Nova Scotian Apples in the Prairie Provinces.' In the course of his remarks, Mr. Baxter said:—

'Shipments during the past year were much fewer than in 1911, due no doubt to the prevalence of scab, particularly on the Gravensteins. This led to some serious misunderstandings. The cancelling of orders for Gravensteins was taken by the merchants in Manitoba to mean a breach of contract for the purpose of securing a higher price elsewhere. This, however, was not the case, as results showed. The failure to fulfil the contracts was unfortunate, yet the action of the shippers is to be commended. The growers had contracted to sell a high quality of fruit such as they usually had. This high grade of fruit was not to be had in Nova Scotia in 1912 at any price and, therefore, nothing remained for the grower but to cancel the order or fill it with inferior fruit which, of course, would not have been satisfactory to the buyers. The Gravenstein is exceedingly popular in all parts of the Northwest. Though it does not come in quite so early in Nova Scotia as it does in Ontario, the texture of the fruit is much firmer and it reaches the market in better condition from Nova Scotia than from Ontario. The quantity, too, grown in Nova Scotia is sufficient to establish a special trade. Its quality is high, higher indeed than any other dessert apple at its particular season. For the Gravenstein, however, the box is the only package, and the adoption of the box would probably be the means of opening up a market for this apple in all parts of Saskatchewan and parts of Eastern Alberta, in which two provinces the box is preferred.'

Mr. Baxter spoke most favourably, as noted above, with reference to the reception of the Gravenstein, and predicted that if it was properly placed on the markets of the Northwest it would probably rival any apple, with the possible exception of the Ontario Snow, as an early dessert apple.

He reports further that his suggestions with regard to Nova Scotian apples in the markets of the Northwest were acquiesced in most heartily and, indeed, in his criticisms of the trade during the season he simply voiced the opinions that had been expressed by the better growers and the co-operative associations themselves. The difficulties were largely those of grading and varieties. Mr. Baxter incidentally reported that he found in Nova Scotia the greatest optimism with reference to the future of the apple industry in that province.

I make the following further extract from Mr. Baxter's report, covering as it does many points not touched on elsewhere:—

'The Province of Alberta, being situated nearer the point of production, naturally receives the greater part of the fruit grown in British Columbia, a small portion being sold in Saskatchewan and Manitoba. Calgary is recognized as the central distributing point for British Columbia fruit. In noting the distribution of British Columbia fruit during the past season, we find there has been a tendency with most shippers to overstock this centre and the nearby towns. It is stated that there were 125 carloads of fruit on the track in Calgary at one time, which necessarily depressed the market.



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‘Frequent rumours were heard of discrimination on the part of the wholesale fruit merchants in the prairies against the British Columbia fruit, but investigation showed that there was no truth in these rumours. On inquiry as to why such large quantities of imported fruit were coming in, the following reasons, purely business ones, were given: Lower prices and prompt delivery to Canadian merchants; fewer varieties in cars; fruit better packed and more pounds to the package.

‘With few exceptions, British Columbia plums and peaches were packed very loosely and the packages contained fewer pounds than those from the United States, which is a consideration with the consumer and retailer, who disposes of them in small quantities. Owing to the very large crop of peaches produced on the southern Pacific coast, prices were low compared with other years, and housekeepers were induced to buy their canning fruit early. When British Columbia fruit appeared upon the market, difficulty was experienced in marketing them owing to the fact that her clingstone varieties came in competition with the freestones from Washington and Oregon. Again, owing probably to inadequate marketing facilities, a large quantity of British Columbia peaches were picked very green and, when offered to the trade, did not present an inviting appearance.

‘Rumours to the effect that low grade imported apples were being dumped upon the markets of the Northwest in large quantities were unfounded; in fact, it is admitted that the grading of apples this year was higher than in previous years, due, possibly, to the extraordinarily large crop. Some British Columbia growers, taking the same view, raised their grades and by doing so established a reputation, and will undoubtedly reap good results in future business.

In connection with Ontario fruit in the prairie markets, Mr. Baxter reports:—

‘The marketing of Ontario peaches, plums, pears, currants and tomatoes has been confined practically to the Province of Manitoba and especially to the city of Winnipeg. These fruits, when properly handled at the shipping point, arrive in good condition. Some shipments of early tomatoes arrived in poor condition, due largely to excessive rains and unfavourable climatic conditions while growing. Later shipments, however, arrived in good condition and found ready sales at good prices, especially when put up in the six quart basket. It is a great mistake to put tomatoes in a basket larger than this as the great weight in the larger package results in loss in the lower layers.

‘The shipment of early peaches of the clingstone type, such as the Triumph, should be discouraged, because if picked while immature the fruit rots before it is ripe enough to market, and if allowed to mature on the trees it will not stand up during such a long journey.

‘Many of the early varieties of apples, which were shipped in baskets, were fit only for the cider or vinegar factory and could result only in loss to the shipper. Grapes were received in large quantities and, in the main, arrived in good condition. Greater care should be taken in the loading of the cars. Frequently we found cars loaded from end to end with no space whatever in the centre.

‘The quantity of apples shipped into the Prairie provinces this season was much greater than in any other year, and the season being favourable for shipping, practically no loss from frost was reported. Owing to the lack of uniformity and reliability of the pack of apples received in these markets in the past, greater difficulty was experienced in marketing to advantage individual packs. Associations which had established a reputation for high grading and reliability were given the preference and undoubtedly received a price from 50 cents to \$1.25 per barrel higher than independent packers. Considerable over-pressing was noted.

‘There is no variety of apple which, if properly packed, will bring a higher price in the markets of the Northwest than the Snow. Unfortunately the past season’s crop, owing to scab, was a sad disappointment and resulted in heavy losses all round. This variety should never be packed in barrels.



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'It has been the practice in the past to ship Duchess to the West picked when about half mature and without colour and packed in barrels. This is a great mistake and serious losses have resulted. If the Duchess were thinned on the trees, three or more pickings made of the fruit, and then properly packed in boxes, the returns would undoubtedly be more satisfactory.

'In looking into the distribution of Ontario apples in this market, we find comparatively few were sold in the provinces of Saskatchewan and Alberta. Undoubtedly the demand for apples of the higher grades of dessert varieties, packed in boxes, has been established in these provinces, and in order to regain this market it will be absolutely necessary to conform to the requirements, both as to quality and package.'

Mr. Baxter also gives the following figures which indicate the quantity of apples received into the prairie provinces during the past season:—

From Nova Scotia.. . . . .	18,000 barrels
“ Ontario.. . . . .	238,000 “
“ British Columbia.. . . . .	225,000 boxes.
“ United States.. . . . .	492,000 “

'These figures emphasize a point which I have mentioned before, namely, that this market is highly in favour of the box package. Last year the total number of boxes received in the Northwest was 717,000, and of barrels 256,000. It is also to be noted that 492,000 boxes were imported from the United States. This importation at the present time is necessary, perhaps, in order to supply the demand for high-class fruit, but with the area of bearing orchards increasing in British Columbia year by year and with a continual improvement in the quality of fruit imported from the eastern provinces, the demand for fruit from the United States should be reduced almost to the minimum so that this western trade will be wholly supplied by home grown fruit.'

*British Columbia.*

The fruit growing districts of British Columbia are widely separated, rendering the former arrangement of inspection by one officer quite inadequate. Mr. R. G. L. Clarke was appointed chief inspector for the province, with two temporary inspectors, one located on the Island of Vancouver and the other with headquarters convenient for work in the Okanagan Valley. This arrangement is quite satisfactory.

## THE FRUIT CROP REPORT.

The Fruit Crop Report was published regularly the 15th of May, June, July, August and September, and contained the prospects, at the date of issue, of the fruit crop as compiled from the reports of some two thousand correspondents. Below is given the chief facts in connection with the fruit crop of 1912:—

The winter of 1911-12 was favourable to fruit crops generally. The weather, though cold, did little harm to fruit buds. In fact the thinning out of the peach buds in the Niagara district was counted later an absolute advantage. The spring of 1912 was considerably later than usual, perhaps two weeks later in the southern part of the Dominion and one week in the northern districts. The dry hot season of 1911 affected the stand for small fruits very materially, and many acres of strawberries had set so poorly that they might be considered a total failure. Those plantations, however, that succeeded in getting a fair start in 1911 came through the winter excellently and gave large crops. The heavy covering of snow protected the strawberries and probably also the raspberries. On account of the very low temperature in January and February, 1912, it was anticipated that the raspberry canes would be badly injured, and this was the case in a few exposed positions, but speaking generally the crop was not seriously hurt. The acreage of all kinds of small fruits was much less than usual.



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Cherries in 1912 set for a large crop and if weather conditions had been favourable no doubt they would have formed a feature of the year. Unfortunately wet weather set in just about ripening time both in British Columbia and in eastern Canada, with the result that there were very heavy losses. A large part of the British Columbia crop of early cherries was altogether too soft for shipment and the growers were obliged to take a lower price at the canning factory. The later sweet cherries, however, fared somewhat better.

In eastern Canada the early cherries, though too soft for successful shipment, were much better than the late cherries. In nearly all plantations having late cherries incipient rot could be found while the fruit was still on the trees.

The peach crop proved to be much larger than was expected. The crop in western Ontario was not large per tree, but the increased acreage more than made up for any deficiency in the smaller crop per tree, and the needs of the market were well supplied. It was noticeable last year that the competition among canners for peaches was fairly keen. Though the aggregate of the crop was large, the peach growers did not realize the profits that might have been anticipated. The prices in most markets were abnormally low. The reason for this was the bad condition in which the fruit arrived. During the peach season rain fell almost every day, so that the fruit was soft and at no time in a good condition for shipping. Only fruit that had received the greatest care arrived at the point of consumption in a marketable condition.

The plum crop was much above the average but suffered like peaches and cherries from unfavourable weather conditions, and very poor returns were made in the majority of cases. Of course fruit shipped on consignment and in large packages and without refrigeration suffered most. The British Columbia crop was very large, as was also the crop of the neighbouring States to the south. The result was low prices. There is little or no organization among the plum growers, and undoubtedly the returns were materially affected by indiscreet marketing.

The pear crop appears to be decreasing in practically all parts of Canada except British Columbia. The fruit harvested was not sufficient when properly distributed to supply the home markets. Although the exports are exceedingly irregular from year to year, the general trend for the last ten years has been downward. There was a distinct shortage in the local markets in 1912, and it is quite probable that the whole Canadian crop could have been used in Canada at even higher prices than were realized for export. No part of North America is better suited for pear growing than the milder portions of the Canadian apple districts.

The apple season of 1912 was remarkable for the reason that nowhere could it be said that there was an extraordinary crop but everywhere there was a fair crop, with the result that the aggregate of fruit was large. In Ontario, though the conditions with regard to fungous diseases were not so bad as in Nova Scotia, they were altogether too prevalent. British Columbia was favoured with more normal weather conditions and sent out a fair proportion of clean fruit. The total production for Canada was undoubtedly larger than for 1911. This, however, will not account for the fact that prices for the whole season were low, though the prices for good fruit both at the beginning and towards the end of the season might almost be regarded as high. There were, however, very few apples offered for sale in large quantities early in the season, except by co-operative societies. Later, when the crop of individual growers was accumulated in the hands of private buyers, it became evident that prices would have to fall to bring the apples into consumption with sufficient rapidity to dispose of the crop.

The disturbing feature in the marketing of apples, preventing proper distribution and unsettling prices, was the unorganized growers of Ontario and British Columbia. Sales had been made early, particularly in the Northwest, at moderately high figures. These markets were later invaded by large quantities from small



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dealers or from individual growers sending on consignment. The natural result of course followed, that the prices of all apples took the prices of the apples sent on consignment, and many who had bought outright in the earlier part of the season found themselves loaded with stock that they could not dispose of profitably under those conditions. Indeed, much of this stock was held until February and March, and then failed to realize much more than the price paid for the apples in October.

Another interesting feature of the industry was the changed attitude of the large English apple receivers. It had been the practice in former years to send out large sums of money to agents in Canada, with which to pay an advance on all apples shipped to these firms. In 1912 this practice was not followed, and as a consequence many local buyers who had bought in former years, using the money of these Old Country firms, were not able to do business. Growers, not organized into co-operative associations and depending upon these local buyers, found themselves without a market, and large quantities of fruit, especially in Western Ontario, rotted under the trees. The organized growers of Lambton county, for instance, realized \$2 and over for their winter varieties, while the unorganized growers in many cases failed to make a sale at all. Attention was called in the September fruit crop report to the fact that such a condition was likely to occur.

It cannot be said, however, that the fact that a large quantity of apples went to waste in the season of 1912 indicates an over-production. On the contrary, it indicates merely a want of proper distribution and a proper system of marketing. Had the growers in the districts where the apples went to waste been organized into co-operative associations, no matter how imperfectly, there would have been no difficulty in marketing their apples at a fair price. There were many towns and villages in Ontario, and probably in all other provinces, in which there was a decided shortage of apples, certainly after the rush of fall apples and early winters were consumed. It is a hopeful sign, however, to note that the number of co-operative associations in Ontario is increasing rapidly.

On the whole it cannot be said that apple growing received any serious setback last year, but certainly the day of the small individual grower is past, and it will only be occasionally that his orchard will pay.

In Nova Scotia the season was remarkable for the prevalence of scab, induced, of course, by the almost incessant rains. The total precipitation was not extraordinary. The difficulty came rather from the number of days which were cloudy and upon which rain fell, keeping the apple trees nearly always in a moist atmosphere, inducing fungous diseases to an extraordinary extent. The well informed correspondents claim that less than 40 per cent of the apples would pack No. 1 for the season of 1912. It is only proper to note here that all well sprayed orchards had clean fruit.

It is gratifying to note that, notwithstanding the prevalence of fungous diseases, little or no adverse criticism was made of Nova Scotian apples in Great Britain. On the contrary, reports from Glasgow and other points where Nova Scotian fruit had not formerly been in favour, were exceedingly favourable. There appeared to be very few apples that went to waste, although an extraordinary number of No. 3's were placed upon the market. Indeed the quantity of No. 3's placed upon the English market formed a feature of the apple trade of Nova Scotia, and no finer compliment could be paid to the efficiency of co-operative methods than the fact that so many No. 3's could be disposed of. The apples classed as No. 3's were usually fairly well grown and ranked No. 3 mainly from the fact that they were affected with scab. The season in Nova Scotia was quite satisfactory financially to the apple growers.

A marked feature of the Canadian apple trade of 1912 was the appearance of a large quantity of British Columbia fruit, competing with fruit from eastern Canada and from the United States in Alberta and Saskatchewan. Owing to the want of proper organization in British Columbia, the marketing of the fruit cannot be said



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to have been done skilfully. There was an almost equal lack of organization in the four States—Washington, Oregon, Montana and Idaho—each of which had a large crop per tree. In these four States, as in British Columbia, the local associations in former years had been able to dispose of their fruit without difficulty, but this system of marketing broke down entirely under the stress of large quantities of fruit. The net result was that both British Columbia and these contiguous States pushed their fruit into the larger centres of Alberta and Saskatchewan without discrimination. Calgary is, of course, a large distributing centre, but even Calgary could not stand the immense quantities of fruit forced upon the wholesale merchants without giving them opportunities to place it to advantage.

This was particularly unfortunate in the case of British Columbia, because a large number of the orchards were bearing their first crop of apples, and the prices realized were by no means up to expectations. It may be noted here, however, that though prices were low, they were by no means slaughter prices, gauged by the average over a series of years in eastern Canada. Until this year British Columbia people had the advantage of a local market, accustomed to high prices and practically free from competition, and it was only this year that they have really competed with outside growers. It is not extraordinary, therefore, that many of the growers should have somewhat exaggerated notions of the standard price of apples. Eastern growers have for several years been receiving good prices for their fruit, running from \$1.25 to \$1.50 per barrel, counted upon the tree. This, however, is above the normal. Usually in counting standard prices the price is put at \$1 per barrel on the tree. The stage 'on the tree' is chosen inasmuch as it does away with complications in the price of labour for picking and packing and the price of packages. Such prices as these would hardly be acceptable to the western grower.

It is hoped, however, that the British Columbia growers will be more thoroughly organized next year, and it is of equal importance to the Canadian apple growers that the growers of the northwest United States be thoroughly organized.

The year 1912 in the apple industry is one that is likely to give apple growers pause. The increasing production, the insufficiency of the present methods of marketing, and the imperfections of transportation facilities, introduce questions that must be faced squarely or serious disaster is likely to result. If things are allowed to drift as they have, for instance, in the northwest States, and to a certain extent in British Columbia, there is sure to be a day of reckoning. If, on the other hand, the growers carefully plan for these probabilities, as in the case of the Province of Nova Scotia, there is no reason to fear for the future of the apple industry.

The year 1908 may be marked in a general way to note an appreciation in the price of apples in Canada, and high prices were the rule to the grower until 1912. There is every probability that 1912 would have noted a serious depreciation in the price of apples in eastern Canada had it not been for the co-operative associations. As it was, the great mass of growers who did not belong to selling associations received somewhat below \$1 a barrel on the trees, and in many cases, as noted elsewhere, nothing for their apples. It appears evident, therefore, that apple growers must face a period of somewhat lower prices. The number of new orchards coming into bearing and the better care that is given to the older orchards, will very greatly increase the amount of fruit that will enter consumption. Very heavy planting has been made in all the better apple growing districts of Canada for a number of years, and competition will be decidedly increased as a consequence. The market, it is true, is enlarging very rapidly in Canada and the United States. Not so, however, in our largest market, Great Britain. The quantity of apples imported there has remained stationary for nearly ten years, and is not likely to be increased very largely in the near future. The great hope, therefore, of the Canadian apple growers lies in thorough organization—the development of the home market and a reduction in the cost of production.



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## CO-OPERATIVE MOVEMENT IN CANADA IN 1912.

It has been my privilege to note from year to year the progress of the co-operative movement among fruit growers in Canada. The number of associations has increased with each season and the opposition with which they were at first received has to a large extent been overcome. The battle is not yet won, of course, and much remains to be done to complete the organization. Nevertheless, 1912 has been a year of vindication of this method of selling fruit, and shows conclusively that those who have persistently advocated co-operative methods are completely justified. Co-operative selling associations, as has been noted frequently, began in Ontario, but their progress was slow. The first associations with co-operative features date back to 1890 or earlier. The first associations were formed only in those districts that were scarcely worth the attention of the itinerant apple buyer. Many large growers, a few years ago, scouted the idea that they had anything to gain from co-operative methods. This was particularly true of the apple district north of Lake Ontario. Nevertheless, this district is now becoming fairly well organized, though there are still many orchards the apples of which are not yet included in any co-operative association. It must be admitted, too, that many of the associations failed to do all that was anticipated and some of them have disbanded permanently. It is notable, however, that even those associations that have disbanded left an impression, and in many places, after an association had been out of business a few years, a new association has been organized upon better lines, showing that though the organization was imperfect there was still enough good in it to encourage a new formation, and in most cases these second organizations are working successfully. They have learned by experience. The number of associations in Ontario has also gradually increased. In 1905 only 10 societies were reported; in 1907, 23 reported; in 1911, 40 reported; in 1912 there were in Ontario 55 associations in successful operation. Such results show that the movement has come to stay. The associations have been severely tested and have not been found wanting. Nevertheless, they are not realizing the full benefits of co-operative selling from the fact that there has not been co-operation among the different associations. They have succeeded in the picking and packing of their fruit; they have most undoubtedly, too, sold to greater advantage than would otherwise have been possible, still there has been strong competition among the different societies, and frequently many of the evils that were formerly attributed to individuals are finding expression in the dealings of the associations. The competition between Mr. A and Mr. B is neither better nor worse than between associations 1 and 2 except in so far as the managers of the associations 1 and 2 may be more intelligent and shrewder business men than Mr. A and Mr. B, individual growers. The great need, therefore, in Ontario at the present time is a central selling association that will take charge of all the associations for sale purposes. There are many difficulties in the way of accomplishing this, but these difficulties are not so great but that we may hope for a solution and that very soon.

In Nova Scotia conditions are much better. Indeed, Nova Scotia may serve as a model for the organization of other provinces. Many attempts were made in former years to organize a shipping association that would embrace all the growers of the Annapolis and Cornwallis valleys. Such schemes were never successful. Finally it became apparent to the more thoughtful of the growers that the real solution lay in the formation of the small local associations, working at first quite independently of each other; and this method of organization was followed. For several years the number of these associations grew slowly. But even this partial organization showed such excellent results that the number finally amounted in 1910 to about 25. In 1911 a union of many of these associations was effected. The organization of the central association, however, was not a permanent one. Many of the associations doubted the possibility of the central association doing the work required of it. The season of 1911 was an abnormal one in Nova Scotia. The crop was exceedingly



heavy per tree and many new orchards were coming into bearing. The result was that the production of the province was in the neighbourhood of a million and a half barrels, over a million of which were exported or shipped to long distance markets. This was nearly twice the usual production, and completely upset all calculations of former years. Arrangements for picking were quite inadequate. Packages had not been ordered for the unexpectedly large crop. Under the ordinary system of selling, all the usual markets would have been seriously glutted, and it is doubtful whether with the old method of managing the business the transportation facilities would have been at all adequate. The co-operative associations, however, saved the situation. They provided in a wholesale way for labour. Packages were secured not without difficulty, but still in sufficient quantities. Extra ships were chartered and much better use was made of the ordinary facilities than could be made by private dealers, and as a result the apple growers of Nova Scotia secured not only the full quantity of this extraordinary crop, but also prices that were extremely satisfactory. It was the best apple year that Nova Scotia had ever known.

Encouraged by these successes, the United Fruit Companies, Limited, of Nova Scotia, as the association is called, secured incorporation by a special Act of the local legislature. Organization was necessarily not perfect for the season 1912, but though in all probability they did not handle quite one-half of the fruit of the valley, it is freely predicted that for 1913 they will handle 75 per cent. The following table gives the prices which have been obtained for some of their principal varieties:—

	No. 1.	No. 2.
Gravenstein.. . . . .	\$2 07	\$1 73
Dudley... . . . .	2 25	1 75
Emperor.. . . . .	1 95	1 50
Wolf River.. . . . .	2 11	1 75
Duchess.. . . . .	2 05	1 95
Wealthy.. . . . .	2 12	1 60

A notable feature of Nova Scotian co-operation is the extraordinary quantity of supplies which the United Fruit Companies are buying for their patrons. In this distributive work they do not attempt anything like regular store-keeping, but they make use of their warehouse for the purpose of distributing staple commodities such as flour, feed, seed and fertilizers.

The whole tone of the apple growing public in Nova Scotia is optimistic. The orchardists are satisfied with their returns and are looking hopefully to the future. They are not unconscious of the developments that are taking place in every part of Canada and in the United States, but many of the largest growers claim that they are able to stand a further reduction in price per barrel and still make an excellent profit on the business.

The hope of the Quebec fruit grower is in co-operation. Though many parts of the province are eminently suited for fruit growing the industry has not progressed of late years. Legislation has been enacted, however, that renders it easy for selling associations to organize.

Perhaps the most noteworthy feature in Quebec horticulture this year was the organization of the Co-operative Association of Kamouraska. Its organization is noteworthy, not alone because of the success that has attended its initial efforts, but because of the object lesson it furnishes of how co-operative methods may meet a critical situation.

In many portions of the counties of Kamouraska and L'Islet there has been in past years, due entirely to lack of organization, a very great waste of plums, the greater part of which were the Blue Damson and Reine Claude Montmorency varieties. Thousands of pounds of these fruits were allowed to rot upon the ground for want of a market to consume them or a factory to can them.



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Early in the season of 1912, under the leadership of the Provincial Department of Agriculture, a series of meetings was held which resulted in the election of officers for the Co-operative Association of Kamouraska. Plans were immediately made for the disposition of the crop of plums, which was then reaching maturity. Three carloads of plums were shipped in baskets to the Montreal market. Unfortunately the market was at the time glutted, and as there had been no time to make advance arrangements for the sale of the fruit, the prices received were not satisfactory. Without further delay steps were taken to equip a canning factory and the services of an expert canner were employed to supervise this work. The fruit proved to be in good condition, and ten thousand quarts of fruit of excellent quality were put up and sold at very satisfactory prices. In coming years, since there will always be ample time for preparations to be made for the handling of this immense crop, greater success may confidently be expected to attend the efforts of those who have been connected with this important enterprise. An organization such as this, solving as it does a difficulty which has for many years confronted the fruit farmers of Quebec, is a credit to the principles of co-operation. Those who were associated with its inception have every reason to be proud of their foresight and business acumen. It definitely marks out the proper course to pursue for other districts in Quebec equally well suited for fruit growing.

The fruit growers of British Columbia should be easily organized. Composed as they are mostly of enterprising and educated men from the older provinces and from England, one would naturally expect them to more easily unite for mutual benefit. Until recently, however, the lack of large numbers in any one place has militated against co-operation. The large crop of 1912 found the fruit growers with many local organizations, all tinctured more or less with the ordinary competitive methods. It was impossible to secure any union among these various private or quasi-co-operative concerns. As a result the fruit went on the markets of the Northwest irregular in grading and without regulation as to quantity to any particular market. There was also no organization to properly investigate markets, and while certain markets in the Northwest were supplied with British Columbia fruit equally desirable markets within the province were being supplied with imported fruit. The conditions all impressed the necessity for organization among fruit growers. Strong efforts are now being made to properly organize the province upon purely co-operative lines in anticipation of the increasing crops in years to come.

## NO. 3 GRADE.

The peculiar conditions in the Nova Scotian apple crop during the past year developed a feature with reference to the marking of grades, which indicates a growing tendency toward higher grading and more clearly defined grades and grade marks. Grade No. 1 appears to be fairly satisfactory. Fruit growers, however, are not at all unanimous with reference to grade No. 2. The fruit growers of Nova Scotia at their last annual meeting were practically unanimous in requiring a better class of fruit for the No. 2 grade than the definition calls for. This is partly the result of the various sources of education in the culture of better fruit, but perhaps more particularly the influence of the co-operative associations who controlled a large percentage of the crop and who decided to pack No. 2 much higher in grade than the Act called for. This threw a large quantity of fruit, which was usually graded No. 2, into the No. 3 grade, but as the No. 3 grade has no downward limit, it is lawful for a man to mark anything in the shape of an apple No. 3 grade, even if it is the veriest cull. Owing to the prevalence of scab there was a very large quantity of No. 3 apples that had good value for cooking purposes and for certain classes of retail trade. In order to distinguish these apples of a fairly good cooking quality, many of which might have been included in a No. 2 grade, the packers added some descriptive phrase to the grade mark No. 3. Once the packers started this practice there was no way of



regulating it, and every packer used the phrase that seemed to him best for this particular purpose. Occasionally packers used phrases upon apples of a most inferior quality, and yet there was no breach of the law, inasmuch as the phrase did not imply any other grade than No. 3. The cargo inspectors of this department have reported from different ports in Great Britain that fully a dozen different phrases, such as 'No. 3 ordinary,' 'No. 3 spotted,' 'No. 3 large,' were used in addition to the simple grade mark 'No. 3.' This caused great confusion and not a few protests from British merchants. The intention of this paragraph is to report facts simply. It is quite possible that similar conditions may not arise soon in the future.

### PACKAGES.

The last revision of the Inspection and Sale Act with reference to packages was in 1906. Packages that were then little used and comparatively unimportant, have now appeared in large quantities upon the local markets, and a necessity for new packages has arisen to meet the demands of the long distance trade in the Northwest, the growth of the last few years. The confusion that formerly existed with reference to barrels and boxes is showing itself in the variety and style of these packages, for which no provision was made in the law. Progressive shippers have noted the necessity for standardization. It is pointed out that there is no proper package for pears, and that a great variety of sizes and shapes are being used in the local market. A package for cherries and a long distance shipping box for peaches are much needed. Tomatoes are also becoming an important fruit for long distance shipments, both from Ontario and from British Columbia.

All these facts point to the advisability of taking up, in the near future, the subject of uniform packages for small fruits and tender fruits, as well as for apples and pears.

A. McNEILL,

*Chief, Fruit Division.*



## APPENDIX IV.

## FINCH AND BROME DAIRY STATIONS.

## FINCH.

Reference was made in the last annual report of this Branch to the purchase of two small cheese factories at Finch, Ontario, with the object of establishing a model combined cheese factory and creamery and experimental dairy station in that locality. The erection of the new building was begun as soon as weather conditions permitted in the spring but it was not ready for occupation until August 23. The manufacture of cheese was carried on in the old factories until that date and continued in the new building until November 20. The station has been operated as a winter creamery since the close of the cheesemaking season.

The quantity of milk received from April, 1912, to March 31, 1913, was 2,223,033 pounds, which yielded 186,938 pounds of cheese and 9,869 pounds of butter. The cheese and butter were sold in the open market, that matter being left in the hands of the patrons, who appointed their own salesman. The rate for manufacturing in the old cheese factories had been for several years  $1\frac{1}{2}$  cents per pound, but after the new station was opened it was raised to  $1\frac{1}{4}$  cents per pound, with the unanimous consent of the patrons. Justification for this increase, notwithstanding the lesser expense of running one factory compared with two for the same patronage, was advanced on two grounds: First, because the old rate is entirely too low for a factory of that size in view of the increasing cost of labour and supplies, and secondly, because the manufacturer who makes provision for the cool curing of cheese and the pasteurization of whey, as has been done at Finch, is entitled to some recompense.

*The Building.*

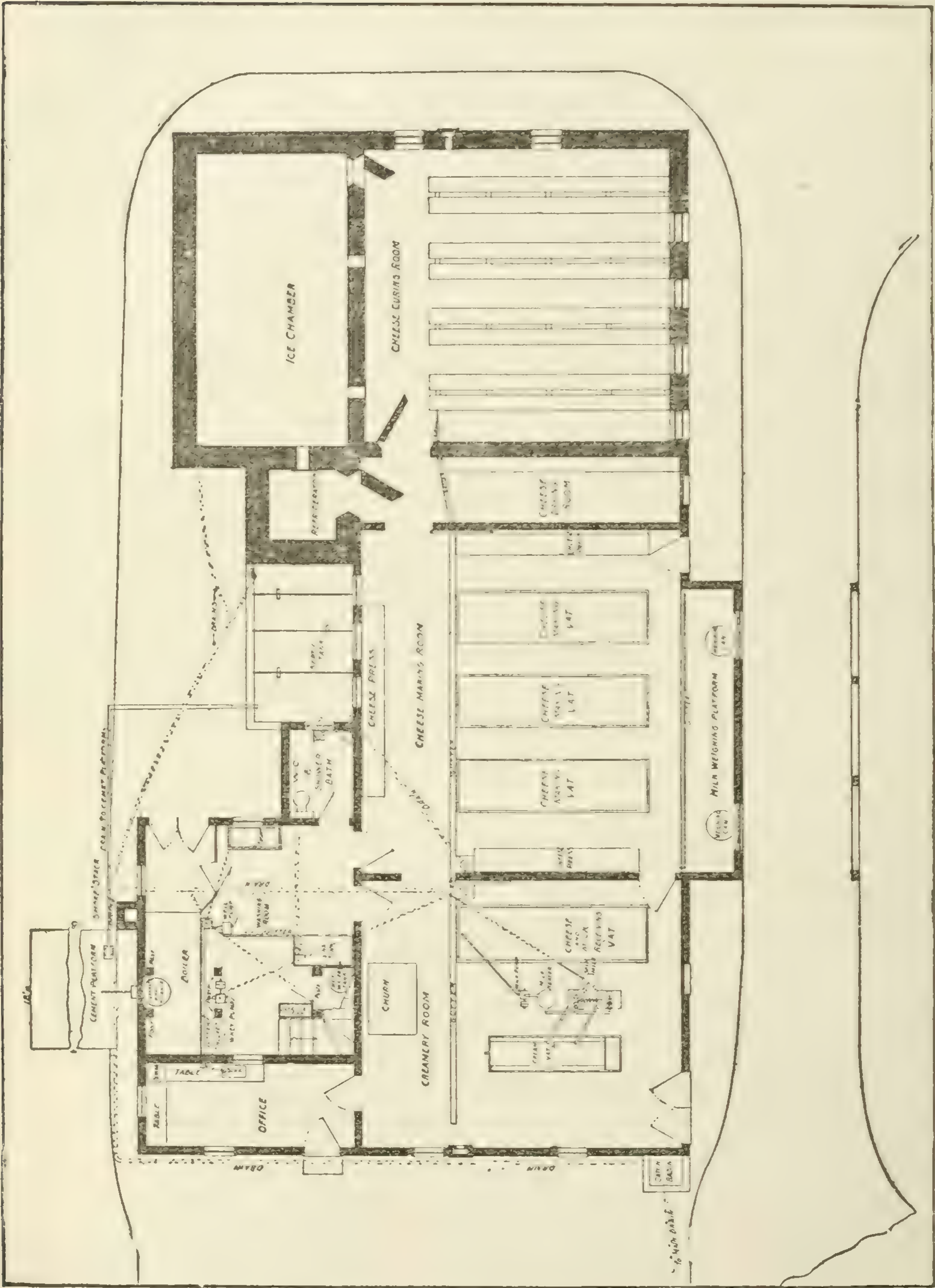
The ground plan of the new factory, which is reproduced with this report (see page 90), shows the general layout of the rooms and the arrangement of the equipment. The rooms are so arranged that the cheesemaking department is not used in the winter months when buttermaking is carried on. The walls of the building are constructed of hollow cement blocks, with the requisite insulation of lumber, damp-proof paper and mill shavings for the ice chamber, curing room and refrigerator.

There is no floor in the ice chamber. A system of tile drain, connected with the sewer, is laid on the surface of the earth to carry off the water from the melting ice. On top of the tile there is a permanent layer of 10 inches of cinders, covered with loose boards. Before the ice was put in about 10 inches of mill shavings were laid on top of the cinders. The shavings are to be renewed every year. The floor in the refrigerator is insulated with 3 inches of cork board laid on 4 inches of concrete and covered with a wearing surface of 1 inch of cement. All the other floors are of concrete finished with a hard smooth wearing surface.

The partitions are constructed of smooth faced hollow cement blocks. The inside surfaces of the cement block walls and partitions in the cheesemaking room have been covered with white and grey enamel paint, giving a very sanitary and permanent finish. There was some doubt from the first as to whether a hollow cement block would be warm enough for the walls of a winter creamery, and after the experience of last winter it seems advisable to add some insulation on the inside of the walls. It is proposed to erect a 2-inch hollow tile inside the cement blocks and plaster the surface with cement and finish with enamel paint.

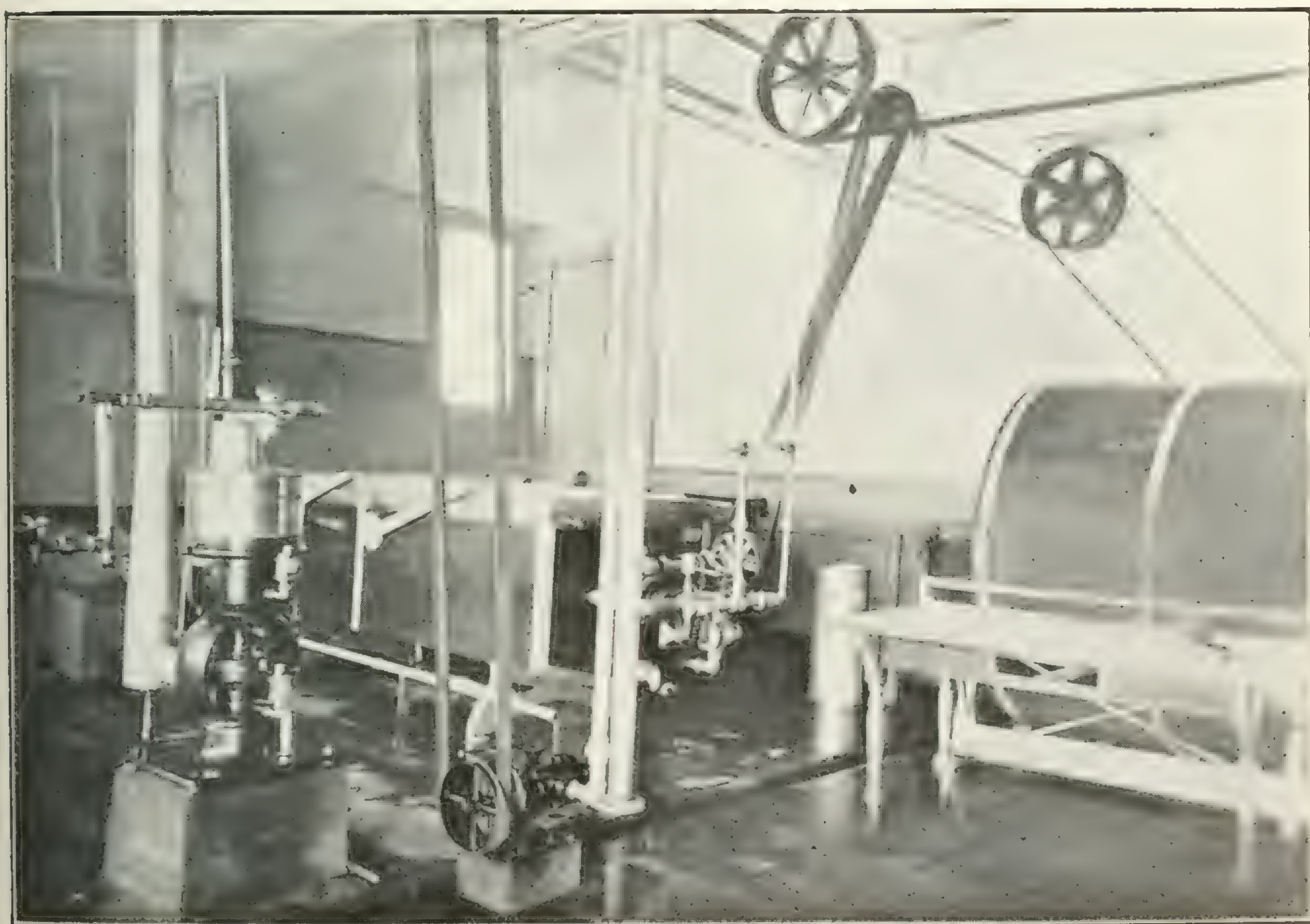
The roof is covered with metallic shingles, and with a concrete smokestack the risk of fire is reduced to a minimum.





FINCH DAIRY STATION.





Brome Creamery, exterior and interior views.









FIGURE 1.—Finch Dairy Station

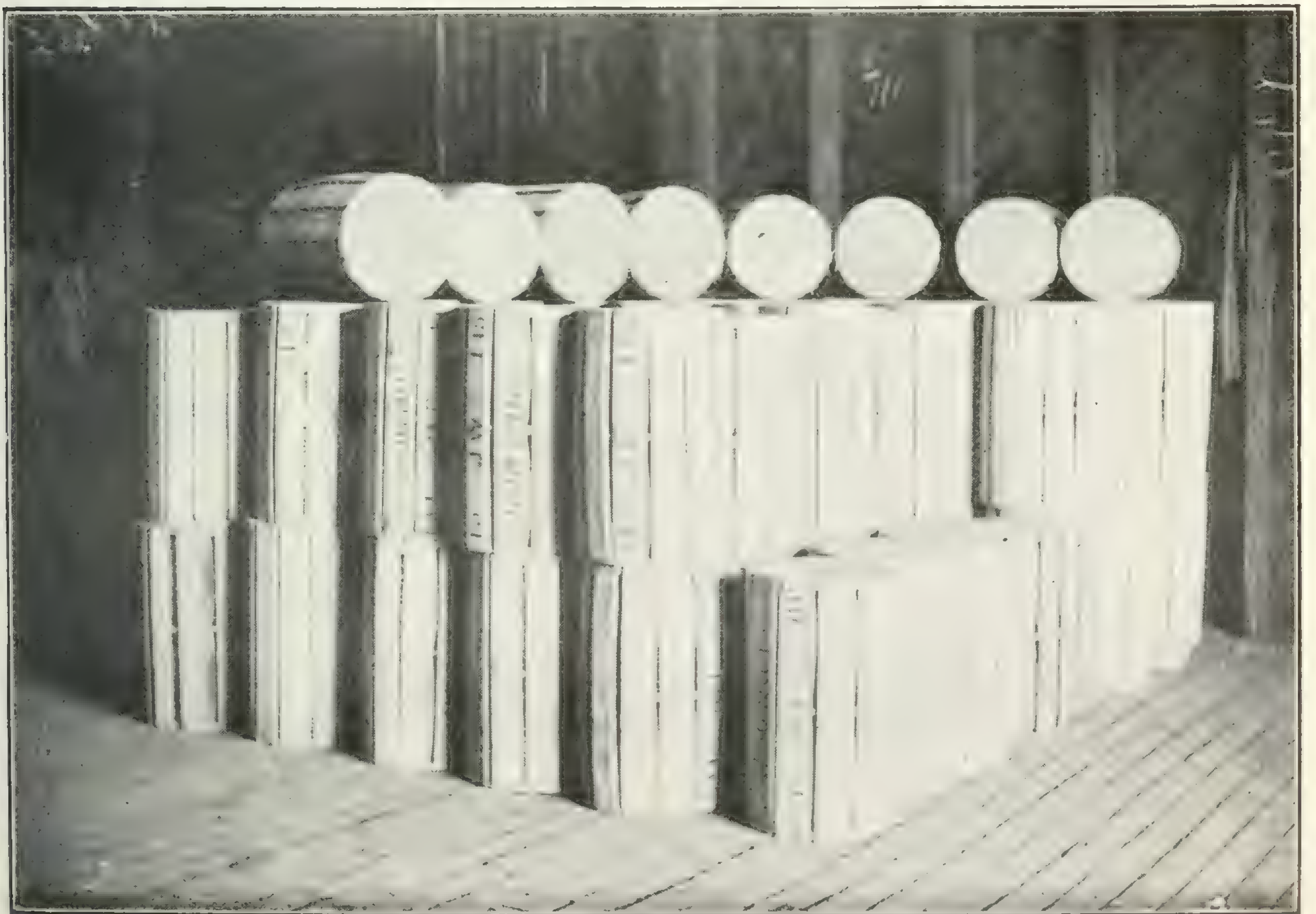


FIGURE 2.—New Zealand cheese crated for shipment.







*The Equipment.*

The cheesemaking equipment consists of the usual vats and presses as found in all eastern Ontario factories. Three of the vats are of the wooden frame type and one is a steel frame. One cheese vat is placed in the creamery room, where it serves as a milk receiving vat during the winter season and can be used when required for cheesemaking purposes. Power agitators are attached to each vat. A small uninsulated room, which is marked on the plan as a 'cheese drying room,' is fitted with cheese shelves. The cheese are allowed to remain in this room for a few hours after being removed from the hoops in order that the surfaces may become thoroughly dried. If the cheese have wet surfaces when placed in a cool curing room there is a strong tendency to mould.

The milk, cream and butter are handled in the creamery department with the following apparatus, all on one level. A sanitary, rotary milk pump lifts the milk from the receiving vat through sanitary pipes and fittings to a 'B. & W.' heater, from which it flows to two cream separators, one 'DeLaval' and one 'Simplex.' The cream is carried direct from the separator to a 'Wizard' cream ripener, where it is first pasteurized and then cooled as required. A 'Success' churn completes the creamery machinery. It is intended to add different types of heaters and pasteurizers and also another style of cream vat or ripener.

The whey and skimmilk are handled in the following manner. A basin was constructed in the cement floor, into which the gutter, as shown in the plan, empties. The suction from a large sanitary rotary pump is connected with this basin and the skimmilk or whey, as the case may be, is lifted to a steel tank in the upper storey over the boiler room. The pump is large enough to handle the whey when three vats are being 'run off' at the same time. In the bottom of the basin mentioned there are two outlets consisting of cesspools with bell traps, one connecting with the septic tank and the other to the drain direct. Either or both of these outlets can be closed at will. Provision is made for pasteurizing both the skimmilk and whey. A separate tank is provided for buttermilk. The whey and skimmilk are delivered to the patrons through two 'Eclipse' measuring machines. This equipment enables the creamery to handle 20,000 to 30,000 pounds of milk and deliver the pasteurized skimmilk back to the patrons on the same day without unnecessary delay. The tanks are then thoroughly washed before the next day's milk is received. A cement platform, provided with drains, has been constructed under the skimmilk and whey deliveries to prevent the nuisance and fly breeding ground too often found in such places.

As the station is situated in the village of Finch, in a flat clay country, it was necessary to make some special provision for drainage. A septic tank is placed just outside the building, into which all drainage except clean cooling water is directed. The effluent from the septic tank is carried to the drain which passes through the main street of the village. It is too early yet to report on the work of the septic tank.

A provision was made in this building, which should be in every factory, and that is for a shower bath for the use of the employees. A small corner off the engine room with water and steam pipe connections makes the matter a very simple one.

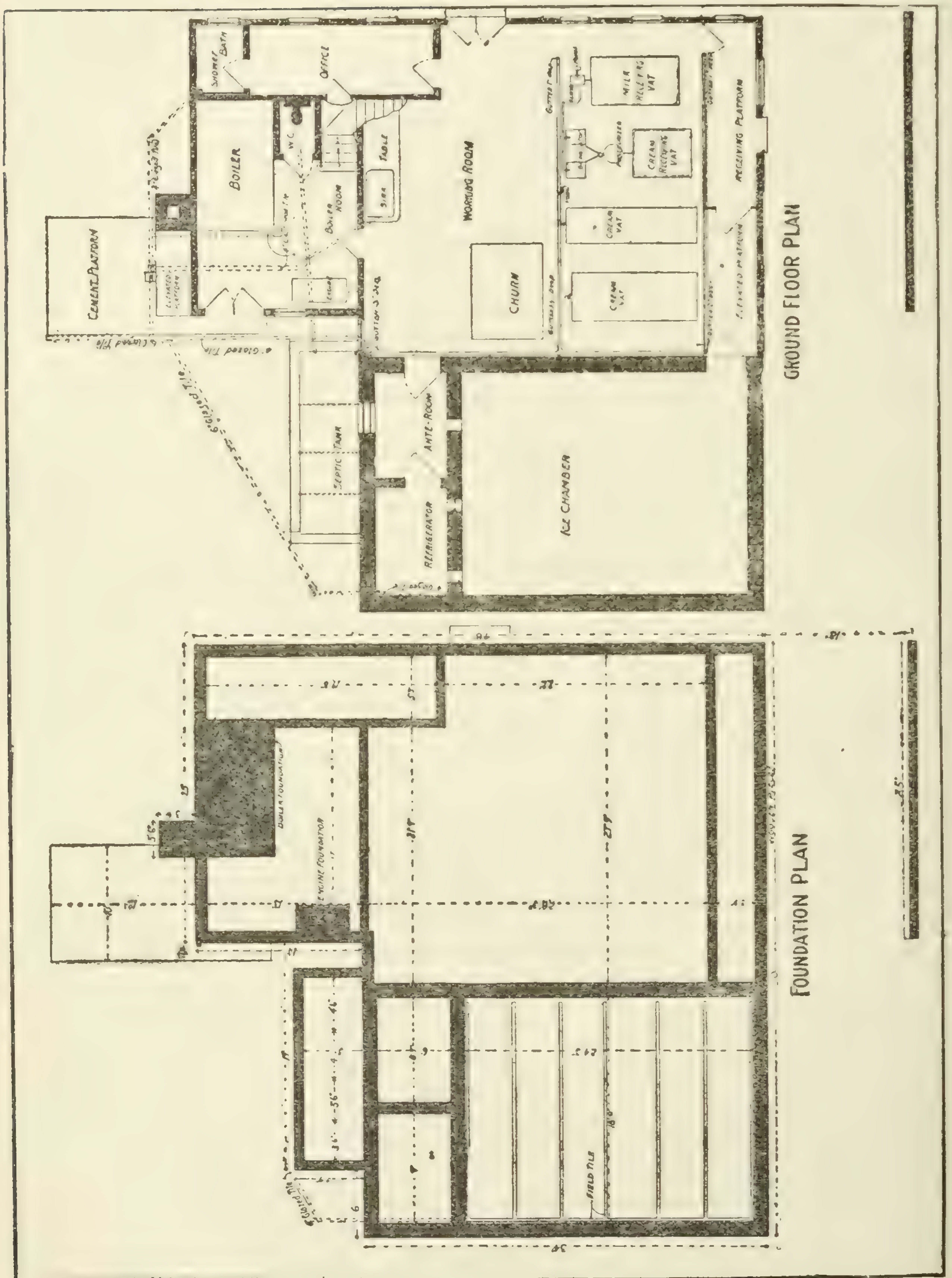
There has been no attempt to make a show place of this dairy station (see Plate II), but rather to use such construction and material as can be copied by any person who wishes to erect a sanitary building of permanent construction suitable for summer or winter work. The contract price for the building, cement block smoke-stack, and concrete platform under whey delivery was \$6,000.

Full working plans and specifications for the Finch Dairy Station are being published in bulletin form.

BROME.

Mention was also made in the last report of the purchase of a creamery at Brome, Quebec. Tenders were called for the erection of a new building early in the season,





BROME CREAMERY.



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but none were received that could be accepted. Further tenders being called for later on, a contract was entered into and the building was completed and ready for occupation on December 13, 1912.

The manufacture of butter was carried on from March 27 to December 13 in the old creamery. The Brome Creamery is operated on the dual system, receiving both milk and cream. There was received from March 27, 1912, to April 14, 1913, 1,067,204 pounds of milk and 49,434 pounds of cream, from which was manufactured 66,243 pounds of butter.

The old rate for manufacturing at Brome was 2½ cents per pound for patrons who delivered milk and 2 cents for those who delivered cream. The rate is to be raised this spring a quarter of a cent a pound for milk patrons and half a cent for cream patrons.

Arrangements have been made to erect two skimming stations in adjacent territory, and it is expected that the quantity of butter manufactured during the next twelve months will be more than double that of last year.

*The Building.*

The new building at Brome (Plate I) is of wood construction with concrete foundations and floors. The foundations rise 6 inches above the floor, thus providing a cement base for the wooden walls. As is shown in the accompanying plan (page 92) the building includes a refrigerator on the circulation system. The insulated ice chamber, which is large enough to hold a season's supply of ice, is connected with the butter storage room by openings in the partition which promote a circulation of air over the ice and through the storage room, giving a constant temperature, without attention, of about 40 degrees.

A septic tank is also provided to handle the drainage from the creamery.

The building, complete with septic tank and brick smokestack, was erected by contract at a cost of \$4,000.

The full working plans and specifications are being published in pamphlet form for general distribution.

*The Equipment.*

The equipment at Brome is for buttermaking purposes only, and consists of a 'B. & W.' heater, a 'Simplex' separator, a 'Wizard' cream ripener and pasteurizer and a 'Success' churn. Other types of apparatus will be installed as experimental work is undertaken and to demonstrate the advantages or disadvantages of the various methods of handling milk and cream. As both milk and cream are received at Brome there will be an opportunity to compare the whole milk with the cream gathering system in various ways, and to determine the apparatus most suitable for the two systems.

A skimmilk tank is placed in the attic, where there is no trouble from frost during the winter months. The skimmilk is delivered to the patrons through an 'Eclipse' measuring machine. The practice is to deliver the pasteurized skimmilk to the patrons as soon as separated, so that there is none carried over from day to day. Buttermilk is handled in a separate tank.

As at Finch, there has been no attempt to create a show place in the ordinary sense of the term, although we expect to demonstrate that it is possible to operate a creamery without creating the slightest nuisance and to make the building itself and surroundings more or less attractive. The grounds around the building will be planted with trees and the vacant places seeded with grass to be kept like a lawn around a private house. The site adjoins the fair grounds of the Brome Agricultural Society in the village of Brome.

GEO. H. BARR,  
*Chief, Dairy Division.*



## APPENDIX V.

## COW TESTING ASSOCIATIONS AND DAIRY RECORD CENTRES.

## GENERAL.

The year 1912 saw a continuation of the work of the cow testing associations and a further extension of the 'Dairy Record Centre' plan. Records were received of 16,076 cows owned by 1,418 dairymen. Milk record forms have also been supplied to scores of men who keep account of each cow's production privately, not sending their records to this office. Dealers in dairy supplies state that there is a large demand for hand milk-testing machines far in excess of the demand two years ago: this is another indication of the appreciation of cow testing by dairy farmers.

The form for keeping feed records is also in good demand, indicating more discrimination in feeding. It is believed that the general adoption of a 'feed unit' system would be very helpful to most farmers.

Many men who commenced with weighing only three days per month are now weighing daily. This is a natural growth of interest and it pays well; for in general it may be said that the men who take daily weights have no poor cows.

One dairying association in Prince Edward Island, realizing the importance of cow testing association work as a means of improving local conditions, is offering cash prizes to patrons for the production of fat per cow. One rule of the competition is framed to shut out the larger patron, aiming at interesting immediately the indifferent patron.

A perfectly modest claim is that cow testing is the most important dairy work in Canada to-day.

It stands as true now as ever before that *millions* of dollars of extra, *additional* profit from the present number of cows are available as a reward for systematic weighing and sampling.

## INCREASES IN YIELD PER COW.

As one would naturally expect, most gratifying increases in the yield per cow continue to be made by men who profit by what cow testing has to teach.

It is a noteworthy fact that some of the largest gains are made by those who are weighing each milking.

Forms for keeping daily weights are supplied free on application to the Dairy Division.

Such instances as a yield of 6,400 pounds of milk per cow increased to 11,000 per cow in four years would only be possible where there is a definite record of production of each cow to guide the owner.

One herd near Cornwall, Ont., shows the first year an average of 3,700 pounds of milk per cow from a herd of 10 cows, increased the next year to 5,236 pounds from a herd of 11, including four heifers, then the third year an average of 6,982 pounds testing 3.6 from the same 11, fed better and cared for better. This is an increase of *89 per cent.*

Note that the first year's test in this case showed the farmer's judgment absolutely astray; two cows that were thought to be extra good were actually the poorest.

A quick increase at Wooler, Ont., shows the first year 8 cows averaging 5,327 pounds of milk, the next year 10 cows with 7,640 pounds of milk, then the third year 13 cows with 8,307 pounds of milk.

In a herd at St. Hyacinthe, Que., in 1911, the average yield of 8 cows was 4,545 pounds of milk. In 1912 the herd of 8 cows averaged 5,791 pounds of milk, an



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increase of 1,246 pounds of milk, or *27 per cent of an increase just in one year*. The testing of 1911 showed that two cows were poor, so they were beefed; two others were bought and the owner gave the herd better care. Part of this increase in yield may be attributable to the more favourable season in 1912 for milk production.

Another herd at St. Hyacinthe in 1911 averaged 5,413 pounds of milk from 7 cows. In 1912, 9 cows averaged 6,303 pounds, showing an increase of 890 pounds, or 16 per cent in one year. Three cows in this herd are only 3-year-olds, the lowest yield of the three was 5,292 pounds of milk. The owner has a good pure bred sire and thoroughly believes in cow testing.

A third herd at St. Hyacinthe averaged in 1911, 3,682 pounds of milk from 8 cows. In 1912 the average of 8 cows was 5,708 pounds, or an increase of 2,026 pounds of milk or *55 per cent in one year*.

Cow testing pays such a remarkable return on the original investment that it must appeal forcibly to any man giving the subject five minutes serious thought.

To invest \$3 and clear \$300 per year is surely an alluring proposition. Yet that is what confronts a man who owns 20 cows. Whole districts, not isolated herds, are showing this rate of progress; for an additional 1,500 pounds of milk per cow inside three years (and often more than this) has been attained in the aggregate, and is almost assured to any man who has not before taken up cow testing; cow testing does certainly *pay*, and pays well.

TABLE 1.—SOME SAMPLES OF INCREASES MADE THROUGH COW TESTING.

Herds in the Province of	No. of Cows in herd.	Present Yield.		Increase per Cow.	
		Lb. Milk.	Lb. Fat.	Lb. Milk.	Per cent.
Ontario.....	10	6,770	258	2,580	60
Quebec.....	24	7,365	290	2,117	41
Nova Scotia.....	7	5,857	294	858	17
New Brunswick.....	9	5,692	225	1,375	31
Prince Edward Island.....	11	9,188	317	1,592	20
British Columbia.....	6	6,586	229	1,188	22

These increases would probably never have been made unless the owners of the herds had commenced cow testing.

A large number of instances of similar and even greater increases in yield have been already published.

TABLE 2.—POSSIBLE INCREASES.

Showing the *additional income* that might easily be obtained by any dairyman owning 20 cows, by any factory of 500 cows and by all the owners of the present number of cows in the Dominion, if, as already accomplished in several districts, the cows produced only an extra 1,500 pounds of milk each, testing 3.5 per cent of fat, and valuing fat at 30 cents per pound.

Herd, 20 Cows.	Factory, 500 Cows.	The Dominion, 2,890,100 Cows.
30,000 lb. milk. 1,050 lb. fat. Value \$315 00	750,000 lb. milk. 26,250 lb. fat. Value \$7,875 00	4,335,150,000 lb. milk. 151,730,250 lb. fat. Value \$45,519,075 00



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The creation of this extra wealth, this substantial sum of *forty-five and a half million dollars*, is not only possible but is comparatively easy. The \$315 in the table is the return that almost any dairyman may expect on a time expenditure of only about ten minutes per cow per month, and a small cash investment of about \$3 for scales and sample bottles. Not many investments hold out similar inducements.

## SOME POOR RECORDS.

It is occasionally remarked that if the average production per cow in Canada is only about 3,500 pounds of milk, then, seeing that we know of many excellent records, there must be some very poor cows somewhere. One man in Ontario who has just completed his first year of cow testing has an average yield from his 10 cows of only 1,993 pounds of milk and 69 pounds of fat. The ages of the cows are 6, 9, 5, 5, 5, 4, 9, 3, 3 and 4. The highest yield is from a 3-year-old and is 3,079 pounds of milk and 104 pounds of fat. We confidently expect to see this herd average at least doubled during the next four years; probably nothing but cow testing would provide the incentive to improve.

Another herd in Ontario contains two poor cows, a 7-year-old pure bred gives only 2,845 pounds of milk and 128 pounds of fat.

In more than one district are found herds of from 6 to 16 cows where the average yield of fat per cow for the whole year is only from 140 to 165 pounds of fat, and the average test is only 2.9 per cent of fat.

This is a strong argument in favour of paying for milk by the test at cheese factories.

## SOME GOOD RECORDS.

An average yield from 6 cows of 9,481 pounds of milk and 359 pounds of fat is one of the good records that cow testing has assisted in compassing. This is the more encouraging because of the highly promising yields from the young stock. Two 2-year-olds in this herd yield 7,770 and 7,515 pounds of milk, and 261 and 264 pounds of fat; and two 3-year-olds give 8,860 and 10,045 pounds of milk, and 310 and 337 pounds of fat.

A herd of 12 cows in Prince Edward Island with an average yield of 9,018 pounds of milk, 3.6 test, and 325 pounds of fat, furnishes another record of great interest. Again the good yields of the heifers help the general average, for included in the herd are three 2-year-olds and three 3-year-olds.

A most promising record in Ontario is that of 9,521 pounds of milk, 3.2 test, and 308 pounds of fat, from a herd of 23 cows, including three 3-year-olds.

There are a few cows on the register giving during their best months as high as 2,100 and 2,600 pounds of milk, and 62 and 75 pounds of fat in 30 days. Such records as 11,160 pounds of milk and 335 pounds of fat in seven months indicate what respect we should give to the unselfish cow, and what care should be bestowed on the possessor of an organization capable of producing such a quantity of pure food.

Two herds at Perth show how widely different are the attainments of some farmers and some cows. (Is the difference in yield an indication of more intelligent farming?) One man with *four* grades has a total production of 40,646 pounds of milk, a neighbour keeps *ten* cows and gets from them only 36,480 pounds.

It is desired again to call attention to the terrific waste incurred when handling this poor type of cows. One should consider time, feed, energy, capital invested, &c. Looking at all the records received from Ontario herds a moderate computation is that *sixteen* cows are now being kept to produce as much milk as *ten* should. Then this thought occurs, if Canadian dairymen kept the kind composing the above herd of ten cows, then to supply the present yearly production of milk, instead of keeping the present number of 2,890,100 cows, our dairymen would be saddled with the gigantic task of feeding, milking, caring for and investing in *two and a half times as many*, or 7,225,250 cows.



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On the other hand, the present labour can be considerably lightened, the feed bill can be cut down, and the enjoyment of life can be bound up, as better cows are bred to replace those unworthy a place in a modern, really productive herd.

## INCOMPLETE RECORDS.

It is desired again to call attention to the importance of keeping records for the full lactation period of each cow so as to make sure of total production. Often the weight of milk given after the factories close makes a very considerable difference in the credit due to many cows, because some are so much more persistent milkers.

As in previous reports, many good records cannot be included because, after a few months, record keeping has been unfortunately discontinued.

Cows yielding 6,900 and 9,090 pounds of milk in six or seven months are therefore omitted.

## CONTRASTS.

From a general survey of the records it is possible to make comparisons that are interesting and valuable to every dairy farmer.

There are strange contrasts in production to be noted as regards the yield of milk and fat in different herds, districts and provinces; the breed and age of cows and the average test of the herd; but most important of all to the milk producer is the contrast between individual cows in his own stable. Keeping the figures in his herd record book as supplied free by the Dairy Division, he is in a position to study the individual records and lay plans for speedily bringing the herd up to a high level of profitable production.

A few instances of these contrasts will be of interest.

## CONTRASTS BETWEEN INDIVIDUAL COWS IN THE SAME HERD.

In a herd at Penobsquis, N.B., a 6-year-old grade Jersey gives 7,165 pounds of milk, and a 5-year-old grade Jersey gives only 4,155 pounds. Here is a *difference of 3,010 pounds of milk*.

In a herd at Cowichan, B.C., a 6-year-old grade Jersey gives 7,710 pounds of milk and 368 pounds of fat, while a 5-year-old grade Holstein gives 11,630 pounds of milk and 385 pounds of fat.

In another herd at Cowichan, B.C., an 8-year-old grade Ayrshire gives 5,660 pounds of milk and 213 pounds of fat, and a 5-year-old grade Holstein gives 9,490 pounds of milk and 351 pounds of fat; this is a *difference of 3,830 pounds of milk*.

Two pure bred Jerseys in a British Columbia herd afford a marked contrast: a 9-year-old gives 10,345 pounds of milk and 513 pounds of fat, and an 8-year-old gives only 4,690 pounds of milk and 227 pounds of fat, a *difference of 286 pounds of fat*.

In a herd at Dunk River, P.E.I., a 6-year-old grade gives 9,411 pounds of milk and 372 pounds of fat, and a 4-year-old grade gives only 2,931 pounds of milk and 108 pounds of fat.

In the above five examples the contrasted pairs freshened within a few days of each other.

Some Quebec herds also show great differences in individual yield. At Coulombe in a herd where a 10-year-old gives 7,465 pounds of milk and 255 pounds of fat, a 12-year-old gives 3,076 pounds of milk and 142 pounds of fat. This is a *difference of 4,389 pounds of milk*.

At Ayer's Cliff two 6-year-olds are in sharp contrast, one giving 7,431 pounds of milk and 287 pounds of fat, the other only 3,318 pounds of milk and 137 pounds of fat. Here is a *difference of 150 pounds of fat*.

In a St. Hyacinthe herd a 2-year-old shows up infinitely better than a 9-year-old, the heifer giving 6,020 pounds of milk and 236 pounds of fat, while the mature cow



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produces only 3,472 pounds of milk and 142 pounds of fat. This is a difference in yield of 2,548 pounds of milk in favour of the young animal.

At Ste. Rosalie there is a difference of 4,000 pounds of milk between two cows, a 9-year-old giving 8,490 pounds of milk, a 5-year-old only 4,490 pounds. The yields of fat are 325 and 190 pounds.

In Ontario herds there are many contrasts equally striking. At Embro a 3-year-old gives 4,859 pounds of milk in eight months, and a cow 13 years old gives 11,461 pounds in twelve months and is still milking. Both are grade Holsteins, and differ by 6,602 pounds of milk.

In a herd at Acme a 6-year-old gives 3,920 pounds of milk and 122 pounds of fat, and a 4-year-old gives 10,685 pounds of milk and 329 pounds of fat. This is a difference of 6,765 pounds of milk.

At Oxford Mills is a herd where a 4-year-old gives 5,040 pounds of milk, and a cow 11 years old gives 10,528 pounds.

Such examples as are cited above show what extraordinary variations in yield are to be found in herds all over the Dominion.

When it is considered that these differences in yield, placing the value of milk at \$1 per 100 pounds and fat at 30 cents per pound, amount to a difference of *as much as* \$66 between the earning capacity of two cows owned by the same man, then there is irresistible proof of the need for systematic cow testing. Indeed, in the fourth herd noted above, the difference in gross income between the two Jerseys in British Columbia is not only \$66 but actually \$85.50.

It seems more important than ever to lay great stress on this fact: no mere reckoning of the *average* production of the herd brings out the necessary information; the successful dairyman invariably studies *individuality*, then acts intelligently.

#### CONTRASTS BETWEEN DISTRICTS IN THE SAME PROVINCE.

In the month of July, 28 cows at Summerside, P.E.I., average 623 pounds of milk and 20.7 pounds of fat, and 60 cows at North Tryon, P.E.I., average 156 pounds of milk and 6.6 pounds of fat *more*, or an average yield of 779 pounds of milk and 27.3 pounds of fat. In Quebec in July, the extremes are 470 pounds of milk and 17.2 pounds of fat at St. Paschal; and 830 pounds of milk and 29.7 pounds of fat at Dalhousie Station. The extra yield is thus 360 pounds of milk and 12.5 pounds of fat per cow. In Ontario, also in July, the lowest yield is 588 pounds of milk and 19.6 pounds of fat at Point Abino from 33 cows, and the highest is 1,062 pounds of milk and 33.8 pounds of fat from 31 cows at Cloverdale. The difference is 504 pounds of milk and 14.2 pounds of fat per cow. Had the 33 cows been as heavy producers as the 31 they would have given an extra weight of milk of 16,632 pounds.

All these wide, irregular variations in yield are smoothed and rounded off in the average production for July of 691 pounds of milk and 24.2 pounds of fat. Similar differences may be found every month.

#### CONTRASTS BETWEEN AGES OF COWS.

At Mitchellville, Ont., a herd contains a 16-year-old giving 4,990 pounds of milk and 196 pounds of fat, and a 2-year-old giving 2,950 pounds of milk and 110 pounds of fat. In a herd at the Islands, B.C., a 2-year-old gives 5,160 pounds of milk and 254 pounds of fat, and a 9-year-old gives 12,670 pounds of milk and 557 pounds of fat. Another 9-year-old in an Ontario herd gives only 3,078 pounds of milk and 110 pounds of fat. She is named 'Pet'; probably she is kept because she is a pet, for she could hardly be ranked as a paying proposition. The oldest cow on the register is an 18-year-old, giving only 1,080 pounds of milk, perhaps another 'pet.'



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## CONTRASTS IN LENGTH OF MILKING PERIOD.

Many cows are on record milking for 14 and 15 months; one at Emerald, P.E.I., a 10-year-old Jersey, is still milking at the rate of 350 pounds of milk and 17.5 pounds of fat per month, having milked continuously for 26 months, giving in that time 12,057 pounds of milk and 538 pounds of fat.

On the other hand a great many cows are dry after milking only 3, 4 or 6 months, giving only from 750 to 1,850 pounds of milk in that time.

## CONTRASTS BETWEEN PROVINCES.

In table 18 will be found contrasts in yield each month. For instance, in June the average yield per cow is five pounds of fat more in British Columbia than in Nova Scotia. In May the cows in Ontario average 295 pounds of milk more than those in New Brunswick.

## What some Farmers say about Cow Testing.

From Lanark County, Ont., comes this statement:—

‘We all knew in a general way that some of our cows give much more milk than others, but I am quite sure that none of us realized the difference was anything like so large as it has proven to be. Our best cow gave 7,150 pounds of milk and our poorest cow gave 4,208 pounds, a difference of *one and a half tons*, which is easily \$30.

‘As my cows get exactly the same feed in winter and the same pasture in summer, any one can see at once the great importance of cow testing to raise up the milk production without one cent of increase in the cost.

‘Another point is we know now just what our cows are doing for us; before, we only gave them credit for milk sold to the factory; our best cow paid us \$80, which is far in excess of what we ever expected her to make.

‘The milk fed to our calves must be just such as we get from our cows, so that we should be as much interested in the quality as in the quantity; we had no way of knowing the difference in quality till we tested each cow separately and found great differences.’

‘I find it very much more interesting dairying when keeping records, as well as being able to know which cow to get rid of. I wish there were more in this district keeping records as it is a good guide when you want to get new stock or young calves.’—(From Cassburn, Ont.)

‘We have been weighing our milk now for three years and find it very beneficial. Please send more sheets for daily weights; we would not like to keep cows if we had to stop weighing the milk.’—(From Hollen, Ont.)

‘I never seem to miss the time spent weighing daily, and in any case the benefits more than offset all the time taken.’—(From Hallerton, Ont.)

‘I have been weighing now for one year and find that I have such poor cows in the herd that I am ashamed to send in the figures. I promise you that the unmistakable eye-opener which I have received this year will result in a much happier return next year.’—(From Iona, Ont.)

And another man near Stratford, Ont., who with a herd of ten cows, including one farrow and three 2-year-old heifers, has an average of 9,333 pounds of milk, writes:—

‘I certainly feel well pleased with the idea of weighing the milk at every milking. A person takes more interest in his dairy work when he knows just what his cows are doing every day. I also believe we should keep an account of the feed they consume.’



TABLE 3.—ILLUSTRATING DIFFERENCES IN PROFIT PER COW. A STUDY OF INDIVIDUALITY IN A PETERBOROUGH HERD.

Every dairy farmer needs to check up in the same way the yield, feed cost and profit of each cow he keeps.

Cow No.	Total Yield		Cost of Feed.	Feed cost of Milk per 100 lb.	Feed cost of Fat per pound.	Profit per Cow with milk at \$1 per 100 lb.
	Milk lb.	Fat lb.				
			\$	c.	c.	\$ cts.
1.....	5,920	205·8	31 06	52·4	15·0	28 14
2.....	5,350	206·3	31 06	58·0	15 0	22 44
3.....	5,740	187·3	31 06	54·1	16·5	26 34
4.....	4,900	174·1	31 06	63·3	17·8	17 94
5.....	3,975	129·8	31 06	78·1	23·9	8 69
6.....	3,335	128·4	31 06	93·4	24·1	2 29
7.....	2,690	89·3	31 06	115·0	34·7	Loss 4 16
Average.....	4,558	160·0	31 06	73·4	21·0	14 52

This table shows very clearly and unmistakably the great variation found in an average dairy herd with regard to (1) the individual yield of milk and fat per cow, (2) the feed cost of milk and fat, and (3) the profit per cow over cost of feed.

The average yield per cow is 4,558 pounds of milk, which might be considered fairly satisfactory unless one inquires what composes the total and average. Between the highest yield of 5,920 pounds and the lowest of only 2,690 pounds *there is a difference of 3,230 pounds.* That should emphasize most strongly the utter folly of remaining content with a knowledge of the herd ‘average’ and not giving due credit where credit is due. Could one expect to build up a good herd by retaining cows Nos. 5, 6 and 7? Would they do better if fed and cared for better?

Cows Nos. 2 and 7 with a difference of 2,660 pounds of milk in their yield are both grade Ayrshires, eight years old. On one there is a clear profit of \$22.44, while the other fails to yield enough milk to pay the cost of her feed, and incurs a *loss* of \$4.16.

Even without considering this poorest cow, the next lowest yield is from cow No. 6, producing milk at a feed cost of 93 cents per 100 pounds, or *41 cents more* than cow No. 1. Cow No. 4 gives about 1,000 pounds more milk than cow No. 5, but she makes *nine dollars more profit.*

As the milk yield of cow No. 6 is much more than half the yield of cow No. 1, it might be expected she would give at least half as much profit, but she does not; for as a matter of fact cow No. 1 makes *as much profit as twelve cows like No. 6.*



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TABLE 4.—EXAMPLES OF THE ADVANTAGES OF TESTING FOR FAT AS A GUIDE TO BREEDING.

Cow No.	Age of Cow.	Production.			Value of Milk at \$1 per 100 lb.	Difference.	Value of Fat at 25c. per lb.	Difference.
		Milk.	Fat.	Fat.				
		lb.	%	lb.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
1	5	8,895	2·6	257	98 95	12 85	64 27	.....
2	5	8,610	5·4	434	86 10	.....	108 55	44 28
3	5	7,270	3·9	281	72 70	35	70 37	.....
4	4	7,235	4·9	355	72 35	.....	88 82	18 45
5	10	5,770	3·4	197	57 70	90	19 32	.....
6	6	5,680	3·7	211	56 80	.....	52 75	3 34
7	5	5,885	4·0	221	55 85	10	55 28	8 46
8	10	5,575	3·4	187	55 75	.....	46 82	.....
9	6	6,505	3·5	230	65 05	1 80	57 72	.....
10	6	6,325	3·8	305	63 25	.....	76 25	18 53

It will be noticed in the above table that each pair of cows gives practically the same weight of milk. These contrasts are designed to show that, useful as that knowledge is, the additional information given by the test for fat is invaluable in the selection of cows for building up a profitable herd.

Taking cows Nos. 9 and 10, for example, one might be inclined to retain No. 9, if milk only were considered, though her gross product is worth only \$1.80 more than that of No. 10; but with No. 10's milk testing a little higher, her production of fat is worth \$18.53 more.

The contrast between the first two cows is considerably greater, amounting to \$44.28.

TABLE 5.—SUMMARY OF AVERAGE YIELDS OF HERDS FOR THE FULL PERIOD OF LACTATION IN THE PROVINCE OF ONTARIO, 1912.

Full Period of Lactation.	No. of Associations	No. of Herds.	No. of Cows.	Average Yield.		
				Milk.	Test.	Fat.
				lb.		lb.
Weights and Tests.....	91	483	4,852	5,856	3·4	201·6
Weights only .....	8	13	156	7,214	.....	.....
Total .....	99	496	5,008	.....	.....	.....



TABLE 6.—COMPARISONS OF AVERAGE YIELDS OF HERDS RECORDED FOR THE FULL PERIOD OF LACTATION IN THE PROVINCE OF ONTARIO, 1912.

Electoral District.	Name of Association.	No. of Herds.	No. of Cows.	Average Yield.		
				Milk.	Test.	Fat.
				Lb.		Lb.
Eastern Ontario— Brockville . . . . .	Mitchellville . . . . .	12	188	6,039	3·5	213·9
	Escott . . . . .	2	47	5,194	3·6	190·0
	Mallorytown . . . . .	10	156	5,649	3·3	190·4
Durham . . . . .	Port Hope . . . . .	2	11	5,676	3·7	212·0
Glengarry . . . . .	River Bank . . . . .	1	11	3,623	.....	137·4
Grenville . . . . .	Prescott . . . . .	2	39	7,361	3·3	245·8
	Spencerville . . . . .	2	32	4,850	3·6	176·9
	Actons Corners . . . . .	2	15	5,550	3·5	196·7
	Bishop's Mills . . . . .	4	54	6,280	3·2	204·3
	Burritts Rapids . . . . .	2	9	5,874	3·6	214·9
	East Oxford . . . . .	2	23	5,860	3·4	201·3
	Farmers Union . . . . .	12	83	6,151	3·2	196·4
	Hutchins Corners . . . . .	1	10	6,042	3·4	208·7
	Millars Corners . . . . .	1	16	4,681	3·5	166·4
	Oxford Mills . . . . .	6	57	5,161	3·4	178·5
	South Gower . . . . .	1	14	4,105	3·5	144·0
Hastings, N. R. . . . .	Acme . . . . .	5	45	7,234	3·1	226·7
	Frankford . . . . .	6	65	4,594	3·7	160·6
	Rodger . . . . .	9	85	5,724	3·3	190·2
	Sidney Town Hall . . . . .	7	81	5,340	3·4	184·2
	Wooler . . . . .	8	63	6,029	3·2	197·8
	Wooler (weights) . . . . .	1	8	6,557	.....	.....
	Arrigan . . . . .	1	13	5,565	3·3	187·7
Kingston . . . . .	Cataragui . . . . .	1	17	4,883	3·2	159·5
	Eastern Dairy School . . . . .	7	97	5,755	3·5	201·3
	Hartington . . . . .	7	79	5,392	3·1	170·1
	Keenan . . . . .	3	41	5,736	3·4	196·4
	Pine Hill . . . . .	2	26	5,804	3·4	202·7
	Parham . . . . .	1	6	4,048	3·8	154·6
	Sydenham . . . . .	3	46	6,015	3·1	188·0
	Wagarville . . . . .	2	19	5,775	3·2	188·5
	Bathurst Mutual . . . . .	9	89	5,142	3·4	176·6
	Balderson . . . . .	6	48	6,245	3·4	214·0
	Carleton Place . . . . .	2	21	5,896	3·5	206·9
	Drummond . . . . .	1	6	4,940	3·6	181·2
	Fallbrook . . . . .	3	31	6,279	3·4	211·1
	Ferry Road . . . . .	2	29	6,997	3·1	218·3
	Harper . . . . .	3	25	7,308	3·3	243·3
	Innisville . . . . .	4	57	5,250	3·3	175·9
	Lanark . . . . .	4	38	6,599	3·4	228·7
	Scotch Line . . . . .	6	63	5,905	3·4	203·9
	Scotch Line (weights) . . . . .	2	20	5,143	.....	.....
	Tayside . . . . .	3	30	5,834	3·5	204·1
Peterborough . . . . .	Tayside (weights) . . . . .	1	17	6,453	.....	.....
	Smiths Falls (weights) . . . . .	1	11	9,159	.....	.....
	Unionhall . . . . .	6	63	7,376	3·2	240·9
	Watson's Corners . . . . .	7	45	5,267	3·5	185·9
	Pine Grove . . . . .	1	2	4,350	4·3	190·0
	Westwood . . . . .	1	6	4,812	2·3	157·7
	Central Smith . . . . .	4	51	8,485	3·2	278·9
	Ennismore . . . . .	4	37	5,901	3·5	206·8
	Keene . . . . .	12	99	5,610	3·3	187·2
	Norwood . . . . .	11	67	6,326	3·5	223·0
	Peterboro . . . . .	21	172	5,724	3·6	203·2
	Peterboro (weights) . . . . .	1	7	7,116	.....	.....
	Shearer . . . . .	16	122	5,655	3·4	196·9
	Trewern . . . . .	8	79	6,256	3·3	210·5
	Dalmeny . . . . .	5	70	5,818	3·4	202·9
Russell . . . . .	Finch . . . . .	1	16	4,348	3·4	148·9
Stormont . . . . .	Avonmore . . . . .	9	106	5,653	3·3	189·4
	Boundary . . . . .	6	74	4,444	3·5	156·1
	Cloverside . . . . .	3	37	5,464	3·5	194·4
	Duff's Corners . . . . .	6	75	5,238	3·6	189·0
	Gravel Hill . . . . .	5	68	6,049	3·3	202·8
	Lunenburg . . . . .	11	121	5,222	3·3	181·8



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TABLE 6.—COMPARISONS OF AVERAGE YIELDS OF HERDS RECORDED FOR THE FULL PERIOD OF LACTATION IN THE PROVINCE OF ONTARIO, 1912—*Continued.*

Electoral District.	Name of Association.	No. of Herds.	No. of Cows.	Average Yield.		
				Milk.	Test.	Fat.
				Lb.		Lb.
Western Ontario—						
Brant.....	Alford Jt.....	3	16	5,735	3.2	185.9
	St. George.....	2	24	5,832	3.4	197.9
Bruce, S. R.....	Paramount.....	4	19	6,208	3.3	205.2
Elgin, E. R.....	Corinth.....	1	7	5,067		
	Mapleton (weights).....	1	12	9,980		
Haldimand.....	Dunnville.....	3	21	5,947	3.2	193.1
	Hagersville.....	13	84	5,930	3.2	193.3
	Selkirk.....	5	26	4,852	3.5	169.4
Halton .. .	Milton.....	1	10	5,438	3.5	191.0
Lambton.....	Camlachie.....	1	10	6,833	3.3	227.9
	Forest.....	2	13	5,741	3.3	192.3
Middlesex, E.R. ....	White Oak.....	1	8	5,527	3.4	192.8
Oxford, N.R. ....	Cassel.....	3	43	7,644	3.2	248.8
	German Union.....	6	51	5,724	3.4	196.8
	Innerkip.....	3	38	8,418	3.4	285.7
	North Oxford (weights).....	1	14	6,988		
	Uniondale.....	3	26	8,100	3.6	294.6
	Tavistock.....	8	63	6,073	3.3	202.9
Perth....	Avonbank.....	5	52	5,935	3.4	206.0
	Elma.....	25	304	5,570	3.4	191.6
	Elma and Mornington.....	4	36	6,528	3.3	217.3
	Newry.....	7	65	4,640	3.3	154.7
	Elmbank.....	11	140	5,995	3.3	198.1
	Silver Corners.....	5	65	6,454	3.4	221.4
	Trowbridge.....	5	53	4,904	3.5	171.9
	Wallace.....	8	78	5,261	3.3	174.5
	Black Creek.....	5	41	8,194	3.4	281.4
	Black Creek (weights).....	3	32	8,255		
Welland.....	Bertie.....	7	40	5,933	3.6	217.6
	Point Abino.....	6	22	4,962	3.7	183.7
Wellington.....	Guelph.....	19	141	5,723	3.4	197.0
Woodstock.....	East and West Oxford.....	5	65	5,934	3.4	206.4
	“ “ “ (weights).....	1	28	7,469		
	Hickson.....	1	17	6,205	3.9	240.9
	Spring Creek.....	2	31	9,369	3.5	335.4
	Virtue.....	6	55	5,140	3.5	180.9

NOTE.—This table, and the similar table for each province, contains only a partial list of all the cows recorded during any one month. A great many more records were received but could not be included in this table of total yields because they were records of only four or five months' production. *Records should be kept of each cow for the full milking period.*

The Associations at Black Creek, Innerkip and Uniondale are of interest because when adding three herds together they each average over 8,000 pounds of milk per cow, in strong contrast to the averages of only 4,348 and 3,623 pounds of milk per cow at Finch and River Bank.

The herd at Mapleton, 12 cows with an average of 9,980 pounds of milk, is noteworthy.

Three herds of 10 cows each in the associations at German Union, Guelph and Black Creek have a total production, respectively, of 41,625, 76,558, and 93,331 pounds of milk. The third man therefore makes \$517 more than the first man with the same number of cows.

A herd of some interest is one at Innerkip, where 16 grade cows, including four 3-year-olds, average 7,437 pounds of milk, 3.3 test, and 246 pounds of fat. With the



exception of one yield of 195 pounds, each cow gives over 200 pounds of fat, and one goes as high as 306 pounds.

A herd at Prescott has the very satisfactory average from 24 cows of 6,769 pounds of milk, 3.3 test, and 226 pounds of fat. The lowest yield in this case is 4,782 pounds of milk. Another herd at Prescott is well to the front with an average from 15 grades of 8,306 pounds of milk, 3.3 test, and 276 pounds of fat. The range per cow in this herd is from 212 to 369 pounds of fat per cow.

Such yields make one wonder why a dairyman who is keeping only three or four cows should remain content with handling the kind that averages only 3,458 pounds of milk and 119 pounds of fat, especially when in his neighbouring association at Bertie a herd of four grade cows average 384 pounds of fat. The poorest cow in this herd is one 14 years old, giving 6,770 pounds of milk and 243 pounds of fat. The average of the herd would be considerably higher if this one fairly good cow were not considered, for the other three cows give 406, 443 and 449 pounds of fat each.

A good herd at Uniondale has an average from 13 grades of 9,133 pounds of milk, 3.6 test, and 328 pounds of fat. The lowest yield is 5,172 pounds of milk and 244 pounds of fat from a 3-year-old.

One herd of 12 grades at Avonmore, where one may expect considerable improvement, has an average yield of 3,833 pounds of milk, 3.6 test, and 140 pounds of fat. With the exception of two heifers, 2 and 3 years old, the ages run from 4 to 12. The owner of the 12 cows at Mapleton obtained from his herd a total of 119,764 pounds of milk; this Avonmore lot of 12 cows produced only 46,003 pounds. Would not the extra 36 tons of milk be worth having?

In a herd at Cassel a 5-year-old grade gives 4,600 pounds of milk, while a 4-year-old gives 13,100 pounds. With milk worth \$1 per 100 pounds this indicates a difference in the gross income per cow, as also noticed between two cows in a herd in British Columbia, of *eighty-five dollars*.

TABLE 7—SUMMARY OF AVERAGE YIELDS OF HERDS FOR THE FULL PERIOD OF LACTATION IN THE PROVINCE OF QUEBEC, 1912.

—	No. of Associations	No. of Herds.	No. of Cows.	Average Yield.		
				Milk.	Test.	Fat.
				lb.		lb.
Weights and Tests. ....	59	320	3,043	4,162	3.9	165.1
Weights only ... ..	4	4	40	4,382	.....	.....
Total ... ..	63	324	3,083	.....	.....	.....



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TABLE 8—COMPARISONS OF AVERAGE YIELDS OF HERDS RECORDED FOR THE FULL PERIOD OF LACTATION IN THE PROVINCE OF QUEBEC, 1912.

Electoral District.	Name of Association.	No. of Herds.	No. of Cows.	Average Yield.		
				Milk.	Test.	Fat.
				lb.		lb.
Beauce .....	Coulombe.....	7	72	3,880	4.0	158.3
	St. Côme.....	5	35	3,467	4.0	140.3
	St. Evariste .....	1	11	2,088	3.7	79.3
	St. George .....	1	5	3,650	3.8	142.3
	St. Ludger .....	4	37	3,401	4.1	141.6
	St. Martin.....	4	26	2,932	3.9	115.6
	St. Samuel .....	12	93	3,154	4.0	126.4
	St. Victor.....	3	22	3,202	3.7	124.2
	St. Zacharie.....	2	21	4,118	3.6	156.8
	Cap St. Gabriel.....	2	23	5,338	4.1	219.7
Berthier.....	St. Damien.....	4	40	3,398	4.2	144.9
Bagot.....	Upton.....	1	12	4,420		
Brome.....	Brome.....	1	18	3,798	3.6	139.6
	Knowlton .....	4	53	3,857	3.8	148.2
	Sutton.....	2	28	3,819	4.5	174.5
Champlain.....	Pont Batiscau .....	2	29	5,051	3.8	195.1
	Ste. Anne de la Pérade.....	12	131	4,618	3.9	180.6
	Weights only.....	1	13	4,773		
	Ste. Geneviève .....	5	49	5,014	4.0	186.0
Chateauguay.....	St. Prosper .....	18	139	4,747	4.0	191.3
	Ormstown.....	1	11	7,888	4.4	325.7
Compton.....	Compton.....	2	36	5,388	3.9	195.3
	Milan .....	5	22	4,117	3.6	148.6
Dorchester.....	St. Malo d'Auckland.....	3	21	4,035	3.8	155.4
	St. Bernard.....	1	12	4,051	3.9	161.9
	St. Claire.....	6	34	3,193	3.8	121.4
	St. Edouard de Frampton.....	12	69	2,894	3.6	105.8
	Ste. Hénédine .....	7	47	3,451	3.9	140.6
	St. Isidore .....	10	70	3,489	4.0	140.9
	Drummondville.....	4	31	3,563	3.8	138.8
Drummond .....	Ulverton.....	4	39	4,521	3.4	155.7
	St. Alexandre.....	2	16	3,321	4.2	140.4
Kamouraska.....	St. Paschal .....	2	16	2,759	3.8	107.5
	Kamouraska .....	3	24	2,857	4.0	117.9
Labelle .....	St. André Avellin.....	1	5	3,240		
L'Islet .....	Village des Aulnaies.....	1	11	2,980	3.4	102.9
Lotbinière .....	Ste. Emélie .....	12	83	3,912	4.1	163.0
Missisquoi.....	Cowansville.....	4	64	3,511	4.2	231.4
	Dairy Valley.....	1	7	3,854	3.5	190.0
	N. D. de Stanbridge.....	1	9	3,457	3.8	131.8
	St. Joachim.....	3	62	3,465	3.8	134.0
Montmorency.....	St. Camille.....	1	7	4,038	3.9	161.2
Richmond.....	Richmond and Melbourne.....	2	24	5,902	3.8	224.2
St. Hyacinthe.....	Grand Rang.....	9	83	4,364	4.0	177.4
	Point du Jour.....	7	50	3,999	4.0	163.1
	Dairy School .....	11	152	5,110	4.0	204.9
	St. Hyac. le Confesseur .....	4	39	5,630	3.9	222.5
	Ste. Rosalie .....	3	30	5,324	4.0	216.1
	St. François.....	17	142	4,846	3.9	193.4
	St. Thomas d'Aquin .....	6	53	4,957	4.1	206.5
	Alpha.....	1	8	4,575	3.7	169.5
	Dixville .....	1	6	3,657	3.7	138.5
	North Hatley .....	3	41	4,142	3.7	156.6
Soulanges.....	St. Herménégilde.....	2	23	3,458	3.9	137.8
	Ayer's Cliff.....	12	123	4,559	3.9	179.7
	Barnston.....	8	117	4,377	3.8	169.2
	Fairfax .....	6	93	4,186	3.5	160.8
	Hatley.....	12	98	5,009	3.7	189.5
	Ways Mills .....	11	133	4,136	4.1	170.0
	St. Raymond.....	7	36	2,907	4.1	120.4
	Waterloo .....	6	80	4,078	4.2	172.1
Portneuf.....	West Shefford.....	12	189	3,785	3.9	149.9
Shefford .....	Ste. Françoise.....	1	10	3,889		
Temiscouata .....						

See Note at foot of Table 6.



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TABLE 9.—SUMMARY OF AVERAGE YIELDS OF HERDS FOR THE FULL PERIOD OF LACTATION IN THE PROVINCE OF NOVA SCOTIA, 1912.

Full Period of Lactation.	Number of Associations	Number of Herds.	Number of Cows.	Average Yield.		
				Lb. of Milk.	Test.	Lb. of Fat.
Weights and tests.....	6	27	143	4,777	4.4	209.6

TABLE 10.—COMPARISONS OF AVERAGE YIELDS OF HERDS FOR THE FULL PERIOD OF LACTATION IN THE PROVINCE OF NOVA SCOTIA, 1912.

Electoral District.	Name of Association.	No. of Herds.	No. of Cows.	Average Yield.		
				Milk.	Test.	Fat.
				Lb.		Lb.
Colchester.....	Brookfield ....	4	28	5,221	3.6	189.0
	Tatamagouche.....	1	8	4,801	4.4	215.4
Kings.....	Berwick.....	5	21	3,008	4.2	127.7
Pictou.....	Salt Springs.....	2	5	3,140	5.0	156.7
	Scotsburn.....	7	45	5,074	4.3	219.2
Yarmouth.....	Yarmouth.....	8	36	5,313	5.0	267.5

TABLE 11.—SUMMARY OF AVERAGE YIELDS OF HERDS FOR THE FULL PERIOD OF LACTATION IN THE PROVINCE OF NEW BRUNSWICK, 1912.

Full Period of Lactation.	Number of Associations	Number of Herds.	Number of Cows.	Average Yield.		
				Lb. of Milk.	Test.	Lb. of Fat.
Weights and Tests.....	7	20	175	4,037	4.4	175.7
Weights only.....	1	1	7	5,953		



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TABLE 12.—COMPARISONS OF AVERAGE YIELDS OF HERDS RECORDED FOR THE FULL PERIOD OF LACTATION IN THE PROVINCE OF NEW BRUNSWICK, 1912.

Electoral District.	Name of Association.	No. of Herds.	No. of Cows.	Average Yield.		
				Milk.	Test.	Fat.
				Lb.		Lb.
Kings and Albert.....	Carsonville.....	2	26	3,018	4.1	124.6
	Clifton.....	2	3	3,790	4.8	181.5
	Hampton.....	2	33	5,223	3.7	195.6
	Penobsquis.....	5	49	3,834	5.0	191.6
	Smiths Creek.....	2	11	2,817	4.6	130.4
	Victoria Mills.....	5	40	4,046	3.8	156.4
Sunbury and Queens.....	Welsford.....	2	13	4,892	5.2	253.1
Westmoreland.....	Salisbury (weights only)...	1	7	5,953		

Notice the range in yield in this table, from 2,817 to 5,953 as the herd average of pounds of milk per cow, and from 130 to 253 pounds of fat per cow.

TABLE 13.—SUMMARY OF AVERAGE YIELDS OF HERDS FOR THE FULL PERIOD OF LACTATION IN THE PROVINCE OF PRINCE EDWARD ISLAND, 1912.

Full Period of Lactation.	No. of Associations	No. of Herds.	No. of Cows.	Average Yield.		
				Milk.	Test.	Fat.
				lb.		lb.
Weights and tests.....	13	80	506	5,029	3.7	189.0

TABLE 14.—COMPARISONS OF AVERAGE YIELDS OF HERDS RECORDED FOR THE FULL PERIOD OF LACTATION IN THE PROVINCE OF PRINCE EDWARD ISLAND, 1912.

Electoral District.	Name of Association.	No. of Herds.	No. of Cows.	Average Yield.		
				Milk.	Test.	Fat.
				lb.		lb.
Prince.....	Central Lot 16.....	1	7	3,833	3.6	138.0
	Dunk River.....	16	129	4,627	3.7	172.8
	Hamilton.....	7	42	4,938	3.6	180.1
	Kensington.....	15	99	4,605	3.8	176.6
	Kinkora.....	3	17	4,169	4.1	172.1
Queens.....	North Tryon.....	8	39	5,315	3.6	190.9
	Crapaud.....	10	45	7,263	3.7	270.2
	Emerald.....	5	35	5,027	3.4	243.1
	Hazel Brook.....	1	6	4,317	3.9	168.4
	Marshfield.....	6	21	5,929	3.8	225.5
	New Glasgow.....	1	3	4,613	3.1	145.6
	Park Corner.....	6	51	5,137	3.7	191.2
	Stanley Bridge.....	1	12	4,331	3.5	153.9



The average herd yields in this table vary from 3,833 pounds of milk and 138 pounds of fat to 7,263 pounds of milk and 270 pounds of fat per cow. As the average cost of feed per cow is estimated at \$27.57, the variation in profit over cost of feed runs from \$10.76 to \$45.06 per cow. In other words, on the average each *one* of the 45 cows at Crapaud makes as much net profit as *four* of the kind in the first herd tabled.

TABLE 15—SUMMARY OF AVERAGE YIELDS OF HERDS FOR THE FULL PERIOD OF LACTATION IN THE PROVINCE OF BRITISH COLUMBIA, 1912.

Full Period of Lactation.	No. of Associations	No. of Herds.	No. of Cows.	Average Yield.		
				Milk.	Test.	Fat.
				lb.		lb.
Weights and tests .....	5	29	238	6,266	4.2	262.9

TABLE 16—COMPARISONS OF AVERAGE YIELDS OF HERDS RECORDED FOR THE FULL PERIOD OF LACTATION IN THE PROVINCE OF BRITISH COLUMBIA, 1912.

Electoral District.	Name of Association.	No. of Herds.	No. of Cows.	Average Yield.		
				Milk.	Test.	Fat.
				lb.		lb.
Nanaimo.....	Cowichan.....	16	136	5,995	4.1	248.7
	Nanaimo.....	5	35	6,574	4.5	299.6
New Westminster.....	Chilliwack.....	1	6	9,481	3.4	359.4
	Eden Bank.....	4	36	6,949	3.8	264.3
Islands .....	The Islands.....	3	25	7,451	4.5	335.8

TABLE 17—INDIVIDUAL HERDS, 1912.

Full Period of Lactation.	No. of Herds.	No. of Cows.	Average Yield.		
			Milk.	Test.	Fat.
			lb.		lb.
Weights and tests.....	4	38	4,097	3.6	146.0
Weights only .....	14	172	6,054		

See Note at foot of Table 6.



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TABLE 18.—SUMMARY OF AVERAGE MONTHLY YIELDS, 1912.

Month and Province.	Total Number of Herds.	Total Number of Cows.	Average Yield.		
			Milk.	Test.	Fat.
			Lb.		Lb.
January—					
Nova Scotia.....	23	114	549	4·7	26·0
British Columbia... ..	35	302	587	4·3	25·1
Quebec.....	27	246	535	4·0	22·0
Ontario.....	111	626	568	3·7	21·4
Prince Edward Island.....	23	118	572	3·8	21·3
New Brunswick.....	7	61	405	5·0	20·5
General average yield.....	226	1,467	558	4·0	22·5
General average, weights only.....	58	328	562		
February—					
Nova Scotia.....	22	123	572	4·6	26·0
Prince Edward Island.....	25	108	690	3·6	25·0
British Columbia.....	32	280	578	4·3	24·9
Quebec.....	32	231	653	3·8	24·7
Ontario.....	120	592	674	3·6	24·4
New Brunswick.....	7	63	436	5·0	22·0
General average yield.....	238	1,397	633	3·9	24·6
General average, weights only.....	51	291	639		
March—					
British Columbia.....	35	313	655	4·2	27·4
Ontario.....	163	771	745	3·4	25·8
Nova Scotia.....	29	150	582	4·4	25·7
Prince Edward Island.....	26	116	696	3·7	25·7
New Brunswick.....	9	68	512	4·7	24·2
Quebec.....	81	527	636	3·7	23·8
General average yield.....	343	1,945	677	3·8	25·7
General average, weights only.....	68	385	676		
April—					
British Columbia.....	35	284	788	4·1	31·9
Ontario.....	333	2,168	749	3·2	24·5
New Brunswick.....	9	177	511	4·8	24·3
Nova Scotia.....	33	178	550	4·3	23·7
Prince Edward Island.....	31	146	617	3·7	22·6
Quebec.....	202	1,642	596	3·6	21·8
General average yield.....	643	4,495	689	3·6	23·9
General average, weights only.....	110	633	715		
May—					
British Columbia.....	33	330	838	4·0	33·5
Ontario.....	535	4,535	839	3·3	27·7
Nova Scotia.....	32	196	606	4·1	25·3
New Brunswick.....	14	136	544	4·3	23·8
Quebec.....	454	3,827	621	3·8	23·6
Prince Edward Island.....	47	238	607	3·6	21·8
General average yield.....	1,115	9,262	734	3·5	25·9
General average, weights only.....	94	729	728		
June—					
British Columbia.....	30	250	754	4·0	30·1
Ontario.....	565	5,610	915	3·2	29·8
Prince Edward Island.....	98	646	764	3·7	28·0
Quebec.....	505	4,920	679	3·8	25·9
New Brunswick.....	23	224	648	3·9	25·8
Nova Scotia.....	36	240	587	4·3	25·1
General average yield.....	1,257	11,890	794	3·5	27·9
General average, weights only.....	47	496	839		



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TABLE 18—SUMMARY OF AVERAGE MONTHLY YIELDS—*Continued.*

Month and Province.	Total Number of Herds.	Total Number of Cows.	Average Yield.		
			Milk.	Test.	Fat.
			Lb.		Lb.
July—					
British Columbia.....	27	206	664	4.1	27.3
Prince Edward Island.....	99	692	711	3.6	25.7
Ontario.....	565	5,847	772	3.2	25.1
Quebec.....	472	4,667	602	3.8	23.3
New Brunswick.....	29	309	565	4.0	22.8
Nova Scotia.....	30	191	541	4.2	22.6
General average yield.....	1,222	11,912	691	3.5	24.2
General average, weights only.....	42	496	713		
August—					
British Columbia.....	30	283	629	4.2	26.5
Ontario.....	532	5,567	723	3.4	24.6
Prince Edward Island.....	90	624	648	3.7	23.9
Nova Scotia.....	29	177	476	4.5	21.6
Quebec.....	432	4,253	524	4.0	21.3
New Brunswick.....	29	305	496	4.0	20.1
General average yield.....	1,142	11,209	631	3.6	23.2
General average, weights only.....	43	482	712		
September—					
British Columbia.....	28	208	624	4.2	26.2
Ontario.....	516	5,348	685	3.5	23.9
Prince Edward Island.....	85	592	620	3.8	23.6
Nova Scotia.....	28	147	460	4.6	21.1
Quebec.....	353	3,507	471	4.2	19.8
New Brunswick.....	28	252	437	4.3	19.0
General average yield.....	1,038	10,054	596	3.7	22.4
General average, weights only.....	40	457	650		
October—					
British Columbia.....	30	226	588	4.4	25.7
Ontario.....	461	4,732	591	3.7	21.8
Prince Edward Island.....	68	468	542	3.9	20.9
Nova Scotia.....	24	125	450	4.6	20.9
Quebec.....	261	2,607	412	4.4	18.0
New Brunswick.....	29	231	412	4.3	17.8
General average yield.....	873	8,389	526	3.9	20.5
General average, weights only.....	40	401	560		
November—					
British Columbia.....	29	207	555	4.5	25.0
Nova Scotia.....	27	144	427	4.7	20.2
New Brunswick.....	25	206	436	4.2	18.3
Prince Edward Island.....	58	387	437	4.1	18.1
Ontario.....	359	3,324	440	3.8	16.9
Quebec.....	164	1,565	320	4.5	14.4
General average yield.....	662	5,833	411	4.0	16.7
General average, weights only.....	35	345	460		
December—					
British Columbia.....	26	190	562	4.5	25.1
Nova Scotia.....	24	128	500	4.4	22.2
New Brunswick.....	24	176	489	4.2	20.6
Ontario.....	226	1,693	428	3.9	16.6
Prince Edward Island.....	40	236	395	4.0	16.1
Quebec.....	101	892	332	4.5	14.9
General average yield.....	441	3,315	414	4.1	17.0
General average, weights only.....	42	332	414		



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This table is arranged by provinces with the highest yield of fat per cow given first each month. It will be noticed that British Columbia is at the head of the list ten times out of twelve. Ontario has the lowest average test each month.

These average monthly yields correspond fairly closely with those for 1911.

The total number of records of individual cows made during the year was 5,375 for weights only, and 81,168 for weights and tests, a total of 86,543; this is a substantial increase over the 70,196 records of the previous year.

## PERCENTAGE OF FAT.

TABLE 19.—AVERAGE PERCENTAGE OF FAT DURING THE YEAR 1912, BY PROVINCES.

Province.	Total Number of Tests.	Total Pounds of Milk.	Total Pounds of Fat.	Average Per Cent of Fat.
Ontario .....	40,813	29,074,609	993,103.2	3.41
Quebec .....	28,884	15,887,615	629,178.1	3.96
Prince Edward Island .....	4,364	2,728,259	102,142.4	3.74
British Columbia .....	3,079	2,033,348	85,247.8	4.18
New Brunswick .....	2,108	1,052,947	44,776.6	4.25
Nova Scotia .....	1,913	1,016,115	44,875.7	4.41

These average tests correspond very closely with those in 1911.

During 1912 the number of cows tested each month in the Dominion varied from 1,397 in February to 11,912 in July, with a total of 81,168 tests of individual cows for fat during the year. The totals of the monthly yields were 51,792,893 pounds of milk and 1,899,323.8 pounds of fat, thus indicating an average fat content of 3.66 per cent.



TABLE 20—AVERAGE PERCENTAGE OF FAT, BY MONTHS AND PROVINCES, 1912.

Months.	Ontario.		Quebec.		Nova Scotia.		New Brunswick.		Prince Edward Island.		British Columbia.		Total.	
	Number of Cows.	Average age Test.	Number of Cows.	Average age Test.	Number of Cows.	Average age Test.	Number of Cows.	Average age Test.	Number of Cows.	Average age Test.	Number of Cows.	Average age Test.	Number of Cows.	Average age Test.
January.....	626	3.7	246	4.0	114	4.7	61	5.0	118	3.8	302	4.3	1,467	4.0
February.....	592	3.6	231	3.8	123	4.6	63	5.0	108	3.6	280	4.3	1,397	3.9
March.....	771	3.4	527	3.7	150	4.4	68	4.7	116	3.7	313	4.2	1,945	3.8
April.....	2,168	3.2	1,642	3.6	178	4.3	77	4.8	146	3.7	284	4.1	4,495	3.6
May.....	4,535	3.3	3,827	3.8	196	4.1	136	4.3	238	3.6	330	4.0	9,262	3.5
June.....	5,610	3.2	4,920	3.8	240	4.3	224	3.9	646	3.7	250	4.0	11,890	3.5
July.....	5,847	3.2	4,667	3.8	191	4.2	309	4.0	692	3.6	206	4.1	11,912	3.5
August.....	5,567	3.4	4,253	4.0	177	4.5	305	4.0	624	3.7	283	4.2	11,209	3.6
September.....	5,348	3.5	3,507	4.2	147	4.6	252	4.3	592	3.8	208	4.2	10,054	3.7
October.....	4,732	3.7	2,607	4.4	125	4.6	231	4.3	468	3.9	226	4.4	8,389	3.9
November.....	3,324	3.8	1,565	4.5	144	4.7	206	4.2	387	4.1	207	4.5	5,833	4.0
December.....	1,693	3.9	892	4.5	128	4.4	176	4.2	236	4.0	190	4.5	3,315	4.1



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## DAIRY RECORD CENTRES.

## GENERAL.

Besides looking primarily after the broad question of cow testing, each Recorder of a Dairy Record Centre collects notes on various details connected with the system of dairy farming practised in his district, both from the men who are engaged in cow testing as well as from other farmers. By this means information is gathered as to what definite steps a dairyman is taking in building up a good herd, what type of sire is used, what discrimination is exercised in feeding according to the varying individual production of milk and fat, what condition the cow stables are kept in, and so on. Some results of these inquiries, or 'dairy census' as it may be termed, are tabulated below; others, naturally, are personal matters in which the recorders act in an advisory capacity.

These records become of increasing value as this special dairy information is collected from more herds and more cows in more localities. It will be noted that 8,200 cows in 676 herds in 13 Centres are reported on below, as compared with 3,188 cows in 331 herds in 5 Centres last year.

The recorders state that better work is being done, far more careful and exact records are kept, and a general disposition evinced to improve existing conditions and methods, by those dairymen who have been cow testing for one year and have started their second year. Many have proved to be not so indifferent about the matter as at first thought; some, for instance, who had not sent in milk records and had not replied to letters, it was found on visiting had voluntarily commenced to keep daily weights, not simply three days per month. They realize that the information is useful.

Factories deserve good support from patrons. Some herds average only 2,500 pounds of milk per cow for the factory season. Some herds are actually below 2,000 pounds. A moment's reflection shows this is hardly giving the factory a square deal. Operation under such conditions means a high cost of maintenance, a large 'overhead' expense, so that the onus of lowering the cost of making per pound and rendering the factory business successful, lies on the fairly good cow that produces 5,000 or 6,000 pounds during the factory season. Some patrons send 7,000 pounds per cow to the factory.

In the County of Lanark, the recorder, in co-operation with the district representative of the Ontario Department of Agriculture, conducted a special agricultural and educational exhibit at the county fall fairs. A display was made in a tent at eight places for thirteen days.

## THE NEED FOR PURE BRED DAIRY SIRES.

The outstanding need of several of the districts reported on is the use of the thoroughly good pure bred dairy sire. For instance, at the St. Prosper, Que., Dairy Record Centre, only 13 out of 44 herds are reported as having a pure bred sire. Even then the pure bred sire is only a one-year-old as a rule, and the grade sire is seldom even a high grade. At St. Hyacinthe, Que., again, only 19 out of 112 herds have a pure bred sire. Farmers realize well enough that it would be to their advantage, but seem either to lack the ready money for such an investment, or some one to take the initiative in active co-operation for the purchase of the superior animal.

The matter has frequently been referred to both by correspondence and conversation. Once more let us urge farmers to *club together and buy the very best dairy sire obtainable*. Co-operation could not be put to better ends, farmers' clubs might well take up this matter, and most decidedly members of cow testing associations should, above all men, now be in a position to see clearly the need and the advantages of definite instead of haphazard herd-building.



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Fifteen or twenty men in any district, having decided on the breed advisable, can co-operate and buy three or more pure bred sires not related. These may be placed in different sections of the community, under the best care. In two years, or when their heifers are old enough to breed, the sires may be exchanged from one section to another. After another two years, change again. Thus if there are three sires purchased they may be used for six years with this system of exchange without any necessity of in-breeding, if there are five sires, ten years.

Could any plan be more simple or more well worth trying?

The extra value of introducing the pure bred influence is worth at least \$12 per cow per year.

In two contrasted herds the actual yields are, from a herd of 10 cows only 3,327 pounds of milk per cow, in the other herd of 10 cows a yield of 7,647 pounds per cow. In the first case there is the deleterious influence of the common or 'scrub' sire; the second herd is headed by a pure bred and gets better care. It is believed such contrasts are common.

The advantages of this system of community or co-operative breeding are very numerous.



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TABLE 21—DAIRY RECORD CENTRES, 1912, SUMMARY.

Dairy Record Centre.	Total Number of Herds.	Total Number of Cows.	Average Yield per Cow.	Average Yield per Acre cultivated in- cluding Pas- ture.	Average number of Cows kept per 100 Acres.	Average Feed Cost of 100 lb. Milk.	Average Cash Receipts per Cow with Milk at \$1 per 100 lb.	Average Cost of Feed per Cow.	Average Profit per Cow over Cost of Feed.
			Lb. Milk.	Lb. Milk.		Cts.	\$ cts.	\$ cts.	\$ cts.
Avonmore, Ont .....	19	261	5,121	748	14	72	51 21	37 10	14 11
Farmers' Union, Ont.....	50	554	5,230	473	9	67	52 30	35 00	17 30
Frankford, Ont.....	47	514	5,850	449	7	52	58 50	30 80	27 70
Kingston, Ont.....	29	471	5,575	595	10	66	55 75	36 83	18 92
Mallorytown, Ont.....	44	861	5,129	683	13	62	51 29	32 10	19 19
Perth, Ont.....	25	331	5,511	550	10	63	55 11	34 75	20 36
Peterborough, Ont.....	29	222	5,915	393	7	63	59 15	37 44	21 71
Listowel, Ont.....	98	1,233	5,127	603	11	62	51 27	37 12	14 15
Woodstock, Ont.....	61	758	6,192	716	11	65	61 92	40 41	21 51
			Lb. Fat.				Fat at 30 cts.		
St. Hyacinthe, Que.....	112	1,028	173	362	8	69	51 90	30 21	21 69
St. Prosper, Que.....	57	668	163	260	6	74	48 90	30 23	18 67
Ways Mills, Que.....	61	927	133	360	10	96	39 90	32 37	7 53
Kensington, P. E. Island.....	44	372	177	339	7	53	53 10	27 57	25 53
Totals and General average. ....	676	8,200	4,936	472	9	68	49 36	33 86	15 50

The Dairy Record Centre results in Quebec and Prince Edward Island have been calculated on the basis of yield of fat per cow, because the milk averages a higher test than that in Ontario, see table 19. Had the results per cow in Ontario been calculated in fat and not in milk, the profit would be within \$1 of that shown: in the other two provinces the fat basis calculation shows \$7.78 additional profit per cow over the milk basis of calculation.



TABLE 22.—DAIRY RECORD CENTRES, 1912.

CONTRASTS per Herd in (1) Average Yield of Milk per Cow and per Acre (2) Average Feed Cost per Cow and per 100 pounds of Milk, (3) Profit per Cow over Cost of Feed.

Dairy Record Centre.	Lb. of Milk Produced per per Acre of Land Cultivated including Pasture.	Feed Cost of 100 lb. of Milk.	Cash Receipts per Cow with Milk at \$1 per 100 lb.	Cost of Feed per Cow.	Profit (or Loss) per Cow above Cost of Feed.
		\$ cts.	\$ cts.	\$ cts.	\$ cts.
Avonmore, Ont.—					
Highest.....	1,300	83	67 96	45 00	26 16
Lowest.....	484	60	39 81	28 00	4 81
Average.....	748	72	51 21	37 10	14 11
Farmers' Union, Ont.—					
Highest.....	1,176	88	84 74	54 25	42 95
Lowest.....	197	44	33 27	28 00	5 27
Average.....	473	67	52 30	35 00	17 30
Frankford, Ont.—					
Highest.....	1,123	94	115 75	57 95	57 80
Lowest.....	170	32	36 24	13 50	3 00
Average.....	449	52	58 50	30 80	27 70
Kingston, Ont.—					
Highest.....	948	88	76 43	47 15	35 93
Lowest.....	191	49	40 29	24 75	6 30
Average.....	595	66	55 75	36 83	18 92
Mallorytown, Ont.—					
Highest.....	1,546	1 01	72 21	44 10	42 21
Lowest.....	385	41	34 02	24 31	48*
Average.....	683	62	51 29	32 10	19 19
Perth, Ont.—					
Highest.....	1,239	87	83 81	54 00	34 90
Lowest.....	147	50	35 60	27 10	4 40
Average.....	550	63	55 11	34 75	20 36
Peterborough, Ont.—					
Highest.....	633	92	88 84	52 75	45 22
Lowest.....	98	48	36 31	27 70	3 73
Average.....	393	63	59 15	37 44	21 71
Listowel, Ont.—					
Highest.....	1,312	1 08	84 04	53 30	41 67
Lowest.....	123	51	32 38	25 68	2 74*
Average.....	603	62	51 27	37 12	14 15
Woodstock, Ont.—					
Highest.....	1,728	1 17	115 00	55 00	60 00
Lowest.....	316	48	29 55	27 50	4 45*
Average.....	716	65	61 92	40 41	21 51
Average for Ontario....	579	65	54 63	35 76	18 87
St. Hyacinthe, Que.—					
Highest.....	1,280	90	81 87	52 00	29 47
Lowest.....	196	45	31 84	22 00	3 96
Average.....	362	69	43 48	30 21	13 27
St. Prosper, Que.—					
Highest.....	810	1 06	62 19	44 38	29 12
Lowest.....	119	53	25 35	22 76	1 86*
Average.....	260	74	40 93	30 23	10 76
Ways Mills, Que.—					
Highest.....	1,425	1 56	54 60	44 00	25 20
Lowest.....	62	60	26 40	26 00	9 10*
Average.....	350	96	39 90	32 37	7 53
Average for Quebec.....	328	53	39 30	30 98	8 32
Kensington, P.E.I.—					
Highest.....	742	89	68 82	42 41	37 11
Lowest.....	164	39	35 03	16 18	1 27
Average.....	339	53	46 50	27 57	18 93

\* Loss.



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The columns of this table reveal some very extraordinary contrasts. At Woodstock the highest yield of milk per acre of land cultivated, including pasture, is 1,728 pounds; at Listowel and Perth the yields are also high, but the best recorded at Peterborough is only 633 pounds. There are several herds averaging over 1,000 pounds of milk per acre, from which figure the yield drops to as low as only 98 pounds.

Then regarding the feed cost of 100 pounds of milk, still remembering that these are averages of whole herds and not of single cows, it is seen that 80 cents, 90 cents and \$1 is a recurring price; but 50 cents, 40 cents and even 32 cents per 100 pounds is also the cost given.

With milk valued at the old round price of \$1 per 100 pounds, it is seen that some herds average up pretty well, \$70 and \$80 and \$115.75 received per cow; but note in the same column the receipts dropping as low as \$39 and \$33 per cow.

The cost of feed per cow varying from \$13.50 up to \$57.95 for the average of the herd again shows two remarkable extremes. Some details are given below.

And when examining the average profit made per cow, it is noticed that even disregarding those herds that seem to be kept at a loss, the variation is from \$3 up to \$57.80. Four separate districts average \$7, \$14, \$21 and \$28 profit.

Dairymen may well inquire if such variations are normal, or if they indicate any room for change of methods. Comparing their business of milk manufacture with that of making crockery, or simple agricultural implements, or boots, would it be reasonable to find manufacturers of such or any other class of articles in common use discovering such wide variations in cost and profit?

In this table several remarkable contrasts of herd production will be noticed. The number of cows included in the average may be found in table 21. It is not always the case, of course, that the same herd is referred to in each column; the herd with the highest feed cost per cow does not always make the most profit. However, at Farmers' Union, Ont., for example, the herd producing milk at a feed cost of 44 cents per 100 is the same herd that makes the profit of \$42.95 per cow for each of 10 cows. The feed consists of 1 ton of hay, \$10;  $\frac{1}{2}$  ton oat straw, \$3.50; 3 tons ensilage, \$6; straw, \$2; 540 pounds meal, \$7.02; pasture, \$5; total, \$33.52 per cow. This, deducted from the average yield of milk, 7,647 pounds at \$1 per 100 pounds, leaves \$42.95 profit. The herd producing milk to the value of \$84.74 is also the same one costing \$54.25 per cow to feed, leaving a profit of \$30.49 per cow. The feed in this case consists of 1 $\frac{1}{2}$  tons clover hay, \$12; straw, \$1; green oats, \$2.50; 5 tons ensilage, \$12; 1,500 pounds meal, \$21.75; pasture, \$5; total, \$54.25. This herd produces milk at 64 cents per 100 and is one in which some attention is paid to feeding each cow according to her yield.

In the same Centre another herd of 10 cows averages only 3,327 pounds of milk per cow: at a feed cost of \$28, the profit is only \$5.27 per cow, milk costs 84 cents per 100. The feed is 1 ton hay, \$10; 1 ton straw, \$4; 2 tons ensilage, \$6; meal, \$3; pasture, \$5; total, \$28. The cows are low grades and might respond to better feeding and breeding.

Comparing these two items of profit, \$5.27 and \$42.95 per cow, it is seen that *one man is keeping eight cows to make as much profit as one cow makes for the other man.*

It is believed by the recorders at the various Dairy Record Centres that in not a few instances the farmers are estimating the cost of feed entirely too low. It is difficult to see the advantage of trying to blind one's self to the fact that the herd is not as profitable either as it is made out to be or as it should be. If feed costs nearer to \$40 per cow than \$27 or \$28, as given, even after attention has been drawn to it, no one is any the better off though the profit may appear larger; in fact the owner who persists in stating the lower cost is really the only one who suffers, for he evidently attempts to delude himself. Why not face the issue squarely?



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Mr. Freeman Brown, Recorder in the Farmers' Union section, has the following interesting observations to make:—

‘Many men are greatly surprised at the difference in profit per cow. For instance, one herd shows a total profit from 16 cows above the cost of feed of \$414.50, or an average of \$25.87 per cow. But six of those cows made a total profit of \$288.54 and the other ten only \$126.03. Again, two of the ten cows made only \$8.82, while two of the six made a total profit of \$117.37. The best cow gave \$62.25 clear profit and the poorest gave *only 65 cents*.

‘A point worth noting is that often the higher the cost of feed per cow the greater is the profit. Many farmers are not liberal enough with the feed when the cow is dry, hence she is too thin and in too poor condition to commence her duty at the pail.

‘Some prominent men state as soon as milk is paid for according to fat at the factory they will go in for the test. The present pooling system is a drawback.

‘A pleasing feature of the work is the interest shown by the boys on the farm; they will make better dairymen.

‘One man states he is so satisfied with the system that if he really had not the time to look after so many cows he would rather sell two than discontinue keeping records.

‘One dairy farmer after a few tests was convinced the plan is good because he found the cow whose milk he had selected for table use was actually the poorest in fat.

‘Many a man has had to change his opinion as to the respective merits of his cows. Some cows intended for beef have proved the best producers of butter fat.’

Mr. J. B. Lowery, Recorder at the Frankford Centre, makes this important remark: ‘The farmer who feeds most liberally and has a silo makes the most profit.’

In explanation of the very low cost of feed per cow in some cases at the Perth, Ont., Dairy Record Centre, it may be stated that some men feed no grain whatever, and have an abundance of cheap bulky feed, wild hay, which costs only the cutting.

In other cases, however, it would seem probable that the farmers are making too low an estimate altogether. It is difficult to see what good end is attained by misreading the actual merit of the cows.

Mr. C. J. Cooke, Recorder at Kensington, P.E.I., writes: ‘Lots of farmers have told me they do not think it possible to keep a cow for twelve months for less than \$30 and have her give anything like good results, but when it comes to keeping records they are inclined to figure in favour of the cow. Probably the man who estimates \$37.66 as the cost of feed per cow producing 6,144 pounds of milk and 235 pounds of fat has struck it nearer than many others.’

Nearly every stable visited in this Centre is reported in good condition as to light, cleanliness and ventilation. One or two are designated ‘a model cow stable.’

Mr. F. J. Wilkinson, the Recorder at the Ways Mills, Que., Dairy Record Centre, states:—

‘The subject which seems to me to be of great importance and which is perhaps the greatest hindrance to progress in dairying, is the fact that so many farmers have at the head of their herds a bull bred from an inferior milking strain of cows. In many cases he may be a pure bred, yet the results are far from satisfactory. The cheapest is generally the most expensive in the end.’

Mr. Wilkinson also states that far more care can profitably be paid to the running of hand cream separators. One farmer complained his cows were not doing well, but on examination into the low return per cow it was found that the skim milk from the separator tested 1.5 per cent of fat.

‘At a recent meeting of the Ways Mills farmers’ club it was decided to buy a pure bred Ayrshire bull. Arrangements are also completed for a milking competition at the county fair this fall, with good cash prizes offered by local men.



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'Interest in dairying in this section is thus seen to be increasing, for two years ago it would have been almost impossible to have put through either of these two arrangements.'

In the Dairy Record Centre at Kingston, Ont., three records are of special interest. The first two are with reference to the *actual*, not estimated, cost of feed; the figures being \$45 per cow for a herd of 22, and \$47.15 per cow for a herd of 18 cows. This is still another indication that apparently most of the men visited by our recorders are apt to undervalue the cost of feed. These two items are among the highest costs at Kingston, where the average is only \$36.83 per cow.

The other item is the fact that a herd of 18 cows averaging 5,601 pounds of milk at a feed cost of \$27.50 per cow produces milk at a feed cost of 49 cents per 100 pounds. Mr. H. B. Smith, Recorder, states that the owner is a man of good judgment; he had a good crop of corn and wintered his cows on corn, roots, straw, and two tons of concentrates. The average cost at Kingston is 66 cents per 100 pounds of milk.

At Frankford, Ont., one man with 8 grade cows has an average of 6,412 pounds of milk per cow. This is produced at a feed cost of \$27.37, giving the substantial profit of \$36.75 per cow. This man bought no feed, and gives the total feed consumed as pasture, \$84; hay, \$60; cornstalks, \$50; straw, \$25; total, \$219.

With another herd at Frankford, Ont., the clear profit of \$57.80 per cow is made with the herd of 6 cows, costing \$57.95 for feed. The average of \$3 profit per cow is from a herd of 7 cows producing 4,557 pounds of milk at a feed cost of \$42.57. The feed consists of pasture, \$1.25 per month; 7 tons of hay, \$70; grain, \$112.50; roots, \$10.50; straw and cornstalks, \$10.50.

The feed cost of only \$13.50 per cow is given as pasture, \$6; roots, \$2.40; straw, \$5.10; on which the cows produced an average of 3,933 pounds of milk.

At Mallorytown the profit of \$42.21 per cow results from 7,221 pounds of milk produced at a feed cost of \$30. The apparent loss of 48 cents per cow is from 3,402 pounds of milk produced at \$34.50. The low cost of \$24.31 for feed is the average for 21 cows consuming 31½ tons hay, \$315; 12 tons straw, \$48; 10 tons cornstalks, \$30; only 28 bushels oats, \$12.60; pasture, \$105; total, \$510.60.

At Perth, Ont., the profit of \$34.90 per cow is made with 19 cows producing 7,190 pounds of milk, at a feed cost of \$37 per cow and 51 cents per 100. The milk costing 87 cents per 100 pounds is the average of 7 cows producing 3,560 pounds at a feed cost of \$31.20, leaving \$4.40 profit per cow. The feed that costs \$27.10 per cow is given as roots, \$5.30; bran, \$2.87; oat hash, \$1.56; clover, \$3.75; alfalfa, 25 cents; cornstalks, \$5.62; wild hay, \$2.75; straw, \$2; pasture \$3. This is fed to 8 cows, producing 5,331 pounds of milk at 50 cents per 100 pounds and an average profit of \$26.21 per cow.

At Woodstock, Ont., the yield of 1,728 pounds of milk per acre is from 5 grades averaging 6,911 each, or 34,556 pounds, produced on 20 acres. Two herds average \$55 as the cost of feed per cow, one, of 23 cows, producing 8,173 pounds of milk at a cost of 68 cents per 100 pounds; the other herd of 25 cows produces milk at 55 cents per 100 pounds. In this case the 25 cows have the splendid average of 11,500 pounds of milk, and \$60 clear profit. The feed is reported as pasture, \$9 per cow; ensilage, \$8; hay, \$10; roots, \$8; chop, \$20; total, \$55.

The feed cost of only \$27.50 per cow is for 7 cows given hay, \$3; corn fodder, \$6.50; chop, \$3; roots, \$5; straw, \$4; pasture, \$6. This feed produces only 3,022 pounds of milk per cow, at a feed cost of 91 cents per 100 pounds, leaving \$2.72 profit per cow.

At St. Prosper, Que., the highest average herd production is 6,219 pounds of milk per cow at a feed cost of 53 cents per 100 pounds, or \$33.07 per cow, resulting in \$29.12 net profit. The feed for the 6 cows is given as hay, \$73; straw, \$24; roots, \$7.50; grain, \$23.25; salt, 70 cents; pasture, \$70; total, \$198.45.



The highest cost of feed is for a herd of 13 grades, the details being: 25 tons hay, \$250; 5 tons straw, \$15; pasture, \$195; roots, \$45; grain, \$72. This feed, valued at \$44.38, produces an average of 5,327 pounds of milk per cow at a cost of 83 cents per 100 pounds giving \$8.89 profit per cow.

The poor showing of \$1.86 loss per cow is with a herd of 10 grades producing only 2,799 pounds of milk each, with feed estimated at \$29.85 per cow, consisting of 15 tons hay, \$127.50; 12 tons straw, \$36; pasture, \$120; 1,000 pounds grain, \$15; total, \$298.50.

Two items at Peterborough are of value. One man with a herd of 11 cows, averaging 7,171 pounds of milk at a feed cost of \$37.14 per cow, produced milk at a feed cost of *51.7 cents per 100 pounds*, and fat at a feed cost of *14.8 cents per pound*. These figures are both lower than the average at this Centre and are actual records, not simply estimates of feed. In January the cows were fed roots, straw and a meal mixture of oats, barley and wheat. In February the cows getting feed to the value of \$6.28 consumed 10 pounds of meal (mixed as above) per day, valued at \$30 per ton, 25 pounds of roots at \$3, and 20 pounds of straw at \$2.50 per ton. In March they got 10 pounds of roots, 5 pounds of alfalfa hay, and a little cotton seed meal added to the meal mixture. This cost \$7.08 per month. The April menu was alfalfa, hay, straw and meal at a cost of \$9.19. In May they were on pasture for ten days, getting hay and less meal; cost, \$4.69. Succeeding months' pasture is valued at \$1.

For another herd at Peterborough the figures are: 10 grade Shorthorns and Holsteins average 7,280 pounds of milk and 247 pounds of fat an *actual* (not estimated) feed cost of \$35.47 per cow, making milk cost of 48.7 cents per 100 pounds, and fat 14.3 cents per pound.

No official 'report' can convey a sense of the supreme satisfaction and delight that such men experience in dairying with such profitable cows. Dairy records have helped them to achieve these results.

#### ST. HYACINTHE, QUE.

In all the seven branches of the St. Hyacinthe Dairy Record Centre the average yield of 529 cows in 54 herds is 4,774 pounds of milk, 4.0 test, and 193 pounds of fat. The average cost of feed per cow is \$32.83, making the average feed cost of one pound of fat, 17 cents.

The highest average cost of fat in any one branch is with the 145 cows at the Dairy School, where it is 20.1 cents per pound; the lowest is at St. Francois, with 138 cows, where it costs 15.3 cents per pound. In one herd at the Dairy School fat cost *30 cents per pound*; in one herd at Point du Jour, 4 cows yielding 224 pounds of fat at a feed cost of \$25 per cow, produce fat at a feed cost of *11.1 cents per pound*.

The highest average yield of fat per cow is 301 pounds in a herd of 10 cows at St. Hyacinthe le Confesseur. The lowest is 132 pounds, in a herd of 10 cows at Point du Jour.

The highest average yield of milk is in the same herd at St. Hyacinthe le Confesseur, amounting to 8,187 pounds per cow; the lowest is in a herd of 6 cows at Ste. Rosalie, only 3,278 pounds per cow.

With milk valued at \$1 per 100 pounds, this indicates *a difference in income of \$49.09 per cow*.

In the branch at St. Thomas d'Aquin two herds produce fat at a feed cost of 16 cents per pound; one man with 7 cows obtains *242 pounds* of fat per cow; the other with 10 cows obtains only *153 pounds per cow*. *The 7 cows produce 169 pounds of fat more than the 10 cows.*



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Another herd of 10 cows in this branch average 6,747 pounds of milk and 283 pounds of fat at a feed cost of \$38 per cow, making the feed cost of one pound only 13.4 cents.

It pays to keep good cows and to feed them well. Out of 529 cows whose records were kept at this point, 147 give less than 4,000 pounds of milk. Of these 147 cows, 70 are 2 and 3-year-olds, the remaining 77 being from 4 to 16 years old. Leaving out the 2-year-olds, 19 per cent of the 529 cows give less than 4,000 pounds of milk. It will be interesting here to refer to the 1909 report, where it is stated that in British Columbia 38 out of 64 two-year-old heifers gave yields ranging from 4,000 to 10,000 pounds of milk. A good heifer may reasonably be expected to give 4,500 pounds of milk and 200 pounds of fat.

Mr. A. Hamel, Recorder at St. Hyacinthe, has prepared the two following interesting tables.

TABLE 23—SHOWING CONTRASTS BETWEEN TWO GROUPS OF SIX HERDS EACH IN THE ST. HYACINTHE DAIRY RECORD CENTRE.

FIRST GROUP OF 58 COWS IN SIX HERDS.

Herd No.	Number of Cows in herd.	Total Yield.		Average Cost of Feed per cow.	Total Cost of Feed.	Total Value of Fat at 30 cts. per lb.	Feed Cost of 1 lb. of Fat.	Total Profit above Cost of Feed.	Feed Cost of 160 lb. Milk.
		Milk.	Fat.						
		lb.	lb.						
				\$ cts.	\$ cts.	\$ cts.	Cts.	\$ cts.	Cts.
1.....	15	53,196	2,123.0	27 75	416 25	636 90	19.7	220 65	78.0
2.....	10	33,139	1,321.8	23 00	230 00	396 54	17.4	166 54	69.0
3.....	11	40,660	1,668.3	24 00	264 00	500 49	15.9	236 49	65.0
4.....	10	38,155	1,530.1	24 50	245 00	459 03	16.0	214 03	64.0
5.....	6	20,530	875.2	24 00	144 00	262 56	16.5	118 56	70.0
6.....	6	19,672	821.0	24 00	144 00	246 30	17.5	162 30	73.0
Totals .....	58	205,352	8,339.4	.....	1,443 25	2,501 82	.....	1,058 57	.....
Averages. .	.....	3,540	143.8	24 88	.....	43 13	17.3	18 25	70.0

SECOND GROUP OF 58 COWS IN SIX HERDS.

7 .....	8	49,453	1,934.8	36 00	288 00	580 44	14.8	292 44	58.0
8.....	9	56,754	2,360.7	38 00	342 00	708 21	14.5	366 21	60.0
9.....	8	54,608	2,331.2	40 00	320 00	699 36	13.6	379 36	58.0
10.....	7	41,575	1,786.8	38 00	266 00	536 04	14.9	270 04	64.0
11.....	10	81,875	3,015.1	52 00	520 00	904 53	17.2	384 53	63.0
12.....	16	95,654	3,917.3	36 80	588 80	1,175 19	15.0	586 39	61.0
Totals.....	58	379,919	15,345.9	.....	2,324 80	4,603 77	.....	2,278 97	.....
Averages. .	.....	6,550	264.6	40 08	.....	79 37	15.1	39 29	61.2
Difference .....	.....	174,567	7,006.5	15 20	881 55	2,101 95	2.2	1,220 40	8.8

From this table it will be seen that the owners of the second group of six herds receive from the 58 cows an additional 174,567 pounds of milk and an additional 7,006 pounds of fat, the extra cash value of the fat being \$2,101.95. Even though the second lot of 58 cows consume an additional value of feed of \$881.55 they make extra profit above the first lot by the sum of \$1,220.40.

It will also be noticed that the second lot of cows produce milk and fat at a



cheaper rate per pound. Compare the total yields of milk and fat from 10 cows in herds 2 and 11.

The cost of feed per cow in the second group averages \$40.08, as compared with \$24.88 in the first group. In view of the \$1,220.40 extra profit, could better argument be wanted in favour of *liberal feeding*?

The first group of six herds belong to men who have paid little or no attention to breeding from a good dairy sire, being content with a grade, and a poor grade at that. The cows have not received enough good feed to produce milk abundantly, even if they were naturally good milkers or had good ancestry.

The second group of men have been trying to improve. Four of them have *pure bred sires*, and the other two have high grade sires. These men keep records in an interested way, not simply putting down figures in the blind hope that the use of a lead pencil will cause milk to flow. If a cow does not give a good yield she is given to the butcher, but she first gets the opportunity to 'make good' by being fed well.

TABLE 24—CONTRASTS BETWEEN THE BEST AND THE POOREST HERD IN THE ST. HYACINTHE, QUE., DAIRY RECORD CENTRE.

HERD A.						HERD B.				
Cow.	Age.	Milk.	Test.	Fat.	Cost of One lb. of Fat.	Age.	Milk.	Test.	Fat.	Cost of One lb. of Fat.
No.		lb.		lb.	cts.		lb.		lb.	cts.
1	10	6,970	3.4	240.3	21.7	10	4,176	4.1	171.1	13.5
2	10	10,920	3.7	403.2	12.9	8	3,635	4.3	154.6	14.8
3	9	6,175	3.7	227.7	22.8	2	2,525	4.0	100.0	23.0
4	6	6,255	4.4	276.9	18.7	10	2,726	4.2	113.8	20.2
5	7	6,280	3.6	223.9	23.2	10	4,386	3.9	172.0	13.3
6	6	9,580	3.8	360.1	14.4	9	2,925	3.9	103.2	22.3
7	8	7,855	3.7	292.0	17.8	9	5,294	4.0	213.6	10.8
8	6	10,280	3.5	359.8	14.4	4	2,678	3.7	98.4	23.4
9	8	9,120	3.5	323.8	16.0	3	2,064	3.5	72.3	31.9
10	7	8,440	3.5	297.4	17.5	4	2,730	4.5	122.8	18.7
Total .....		81,875	.....	3,015.1	.....	Total....	33,139	....	1,321.8	.....
Average...		8,187	3.7	301.5	17.2	Average.	3,313	4.0	132.1	17.4

Feed—		Feed—	
Pasture...	\$ 12 00	Pasture.....	\$ 8 00
Hay.....	12 00	Hay .....	8 00
Straw.....	3 00	Straw.....	4 00
Corn fodder.....	2 00	Meal.....	3 00
Meal .....	23 00		
Total.....	\$ 52 00	Total .....	\$ 23 00

	Total lb. Milk.	Total lb Fat.	Value of Fat at 30c. per lb.	Cost of Feed.	Profit above Cost of Feed.
			\$	\$	\$
Herd A. ....	81,875	3,015.1	904 50	520 00	384 50
Herd B.....	33,139	1,321.8	396 54	230 00	166 54
Difference.....	48,736	1,693 3	507 96	290 00	217 96

This table indicates a vast difference in the efficiency of two modern dairy herds. Both owners keep ten cows, and produce one pound of fat at virtually the same cost.



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But the cows in herd A average much more than *twice* as much milk and fat as those in herd B. One cow in herd A, No. 2, produces 403 pounds of fat, which is fifteen pounds more than the total fat produced by *four* cows, Nos. 4, 6, 8 and 9, in herd B.

It will be observed that the owner of herd A with the same number of cows as in herd B, not only made \$507.96 extra cash income, but gave his cows \$290 worth more feed, and still had \$217.96 more clear profit.

In the Dairy Record Centre work at Listowel, Ont., the contrast between two herds is so striking that special attention should be given to it.

Leaving out of consideration the fact that apparently one herd of 12 cows was unfortunately kept at a loss of \$2.74 per cow, the two extremes of profit over cost of feed stand for one herd at \$41.67 per cow and for another herd at only 33 cents per cow. This means that each one of the cows in the first herd *made as much profit as 126 of the poor cows* in the second herd.

In one case there was an investment of \$339 in feed and a profit of \$333.36 with 8 cows; in the other case there was an investment of \$602 in feed and a total profit above that sum of only \$4.62 with 14 cows.

Stated in another way, in order to obtain one thousand dollars profit, one man need keep only 24 cows, the other man would be confronted with the **superhuman task of handling 3,030 cows.**

Could stronger argument possibly be wanted in favour of knowing that one is keeping only profitable cows?

CHAS. F. WHITLEY.



APPENDIX VI

CREAMERY COLD STORAGE BONUSES.

There were 84 applications for creamery cold storage bonuses received during the year. Of this number 53 were approved and received the bonus. In the other 31 cases, the conditions were not fulfilled, or the cold storage was not erected.

For particulars of the creamery cold storage bonus, see Circular No. 6 for the conditions under which the bonus is paid and Bulletin No. 36 for plans which are recommended.

A LIST OF THE CREAMERIES THAT RECEIVED THE BONUS IN 1912-13.  
QUEBEC.

Owner.	P. O. Address.	County.	Amount paid.
			\$ cts.
H. W. Winter.	Ormstown.	Chateauguay.	100 00
Frs. Robitaille.	St. Damien de Brandon.	Berthier.	100 00
Ed. Leblanc.	River Caplin.	Bonaventure.	100 00
R. Pelletier.	Ste. Anne des Monts.	Gaspé.	100 00
H. Dubois.	Lorrainville.	Timiskaming.	100 00
Malo Lapalme.	St. Basile le Grand.	Chambly.	100 00
L. Desaulniers.	Louiseville.	Maskinongé.	100 00
P. Rancourt.	Rancourt.	Frontenac.	100 00
Jos. O. Caron.	St. Georges.	Beauce.	100 00
Euclide Phaneuf.	Rapide de l'Original.	Labelle.	100 00
Ulric Olivier.	St. Thomas.	Joliette.	100 00
L. H. Gagnon, Sec.	St. Pâcome.	Kamouraska.	100 00
Séraphin Croteau.	Poitou.	Lotbinière.	100 00
Hubert Jean.	St. Evariste.	Frontenac.	100 00
Denis Larivière.	Ste. Marie de Blandford.	Nicolet.	100 00
Jos. Michon, Prest.	Salvail.	St. Hyacinthe.	100 00
Xenaphon Bergeron.	Methot's Mills.	Lotbinière.	100 00
Arthur Paris.	Parisville.	Lotbinière.	100 00
Jos. R. Coutu.	St. Gabriel de Brandon.	Berthier.	100 00
J. N. Dion.	St. Canut.	Deux Montagnes.	100 00
Fulbert Garneau.	Bolduc.	Beauce.	100 00
Benjamin & Ménard.	Ménardville.	St. John's and Iberville.	100 00
Anselme Plante.	St. Félix de Valois.	Joliette.	100 00
Charles Larocque.	L'Acadie.	St. John's and Iberville.	100 00
Joseph Rocheleau.	St. Didace.	Maskinongé.	100 00
J. A. Lapierre.	Bromptonville.	Richmond and Wolfe.	100 00
Rev. J. de Champlain.	St. Charles de Caplan.	Bonaventure.	100 00
J. H. Héroux, gérant.	Terrebonne.	Terrebonne.	100 00
Philéas Kérouack.	St. Eugène.	L'Islet.	100 00
Eleusippe Lapointe.	Leeds Village.	Mégantic.	100 00

ONTARIO.

Singleton & McKenny.	Cobden.	Renfrew, N.R.	55 00
W. J. Goodwin.	Bismark.	Lincoln.	91 50
Robt. Snell.	Norwich.	Oxford, S.R.	75 00
Salem Dairy Produce Co.	Salem.	Wellington, S.R.	100 00
W. A. McGeachy.	Chatham.	Kent, W.R.	100 00
Keene Dairy Co., Ltd.	Keene.	Peterborough, N.R.	100 00
E. & W. Oxford Union C. & B. Co.	Woodstock.	Oxford, N.R.	55 00



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A LIST OF THE CREAMERIES THAT RECEIVED THE BONUS IN 1912-13—Continued.

ONTARIO—Continued.

Owner.	P. O. Address.	County.	Amonnt paid.
			\$ cts.
Harry Stansell .....	Kinglake.....	Norfolk.....	45 00
T. C. Windatt.....	Beaverton.....	Ontario, N.R.....	90 25
A. H. Campbell.....	Harwood.....	Carleton .....	100 00
Hargrave & Wilson.....	Delhi.....	Norfolk.....	93 50
The Lambton Creamery Co.....	Petrolia.....	Lambton, E.R.....	100 00
J. H. Herron .....	Norwich .....	Oxford, S.R.....	55 50
Irving & Loggie .....	Paisley.....	Bruce, S.R.....	100 00
Walkerton Egg & Dairy Co., Ltd.	Walkerton.....	Bruce, S.R.....	100 00
M. A. Treleavan.....	Palmerston.....	Wellington, N.R.....	100 00

NOVA SCOTIA.

R. B. McLennan.....	Brookfield.....	Colchester.....	100 00
F. E. Porter, Sec.....	Dayton .....	Yarmouth .....	100 00

ALBERTA.

A. Skalleberg & Co....	Meeting Creek.. ..	Township 43.....	100 00
Duvernay Creamery.....	Duvernay .....	Edmonton.....	100 00
W. W. McGregor.....	Daysland.....	Strathcona.....	100 00

SASKATCHEWAN.

Dominion Dairy Produce Co....	Regina.....	Regina.....	100 00
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SUMMARY.

506 Creameries have received the full bonus of \$100.....	\$ 50,600 00
145       "       "       a bonus of \$75.....	10,875 00
139       "       "       "       \$50.....	6,950 00
13       "       "       for special refrigerators.....	1,035 75
803	\$ 69,460 75



APPENDIX VII.

SUBSIDIES FOR PUBLIC COLD STORAGE WAREHOUSES.

CONTRACTS IN 1912-13.

Contracts have been entered into during the year with the following firms:—

- The Brantford Cold Storage Co., Brantford, Ont.
- O'Keefe & Drew, Chatham, Ont.
- The Brandon Creamery and Supply Co., Brandon, Man.
- The Algoma Produce Co., Sault Ste. Marie, Ont.
- The St. Thomas Cold Storage Co., St. Thomas, Ont.
- The Whyte Packing Co., Mitchell, Ont.
- The Lake St. John Cold Storage Co., Hebertville, Que.

Applications are now (March 31, 1913) under consideration from several other firms in different parts of the country. The Acadia Cold Storage Co., of Halifax, N.S., and Scott, Ashton & Co., Morrisburg, Ont., received contracts in 1910-11, but in neither case have they been able to proceed with the erection of the warehouses. The contract with the Acadia Cold Storage Co. has been extended to allow sufficient time for completion of the warehouse. A contract entered into in 1911-12 with Mooers & Bidwell, Saskatoon, Sask., has been allowed to lapse by the contractor, and nothing further has been done towards erecting a cold storage warehouse in that city.

The following is a complete list of the public cold storage warehouses erected under contracts for subsidies since the Cold Storage Act was passed in 1907, and which are now in operation:—

Name.	Total Refrigerated Space.	Cost.	Total Subsidy.
	Cu. feet.	\$	\$
The New Brunswick Cold Storage Co., St. John, N.B.....	744,000	167,000 00	50,100 00
Scott & Hogg, Peterborough, Ont.....	90,000	14,500 00	4,350 00
The Halifax Cold Storage Co., Port Hawkesbury, N.S.....	75,000	30,386 69	9,115 19
Cold Storage, Ltd., Woodstock, N.B.....	37,161	25,577 00	7,673 10
The J. D. Moore Co., St. Mary's, Ont.....	105,000	36,019 62	10,805 88
Lemon Bros., Owen Sound, Ont.....	33,600	20,000 00	6,000 00
The Chatham Fruit Growers' Association, Chatham, Ont.....	50,000	15,000 00	4,500 00
The Palmerston Cold Storage Co., Palmerston, Ont.....	169,984	35,000 00	10,500 00
Davis & Fraser, Charlottetown, P.E.I.....	150,000	50,000 00	15,000 00
The B. Wilson Co., Victoria, B.C.....	64,000	75,000 00	22,500 00
The Trenton Cooperage Mills, Ltd., Trenton, Ont.....	166,446	50,919 41	15,275 82
The Dominion Fish and Fruit Co., Quebec, P.Q.....	225,000	222,843 22	66,832 96
The Lockeport Cold Storage Co., Lockeport, N.S.....	59,940	60,000 00	18,000 00
St. Lawrence Produce Co., Brockville, Ont.....	106,000	32,000 00	15,600 00
Flavelles, Ltd., Lindsay, Ont.....	131,510	53,000 00	15,909 00
Gunns, Ltd., Harriston, Ont.....	57,069	40,000 00	12,000 00
Campbell & Hamilton, Calgary, Alta.....	111,050	75,000 00	22,500 00
The St. Thomas Cold Storage Co., St. Thomas, Ont.....	174,141	123,700 00	37,110 00
The Brandon Creamery and Supply Co., Brandon, Man.....	27,500	32,000 00	9,600 00
O'Keefe & Drew Abattoir Co., Chatham, Ont.....	144,400	65,000 00	19,500 00
The Canadian Fish and Cold Storage Co., Prince Rupert, B.C....	781,000	345,000 00	103,500 00
Moose Jaw Cold Storage Co., Moose Jaw, Sask.....	189,764	90,000 00	27,000 00
J. H. Sansregret, Joliette, Que.....	23,394	22,444 10	6,733 23
City Cold Storage Co., Regina, Sask.....	100,672	50,000 00	15,000 00
The Brantford Cold Storage Co., Brantford, Ont.....	36,000	29,600 00	8,880 00
The Whyte Packing Co., Mitchell, Ont.....	30,600	21,000 00	6,300 00
		1,800,990 04	540,296 98



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## COLD STORAGE AT PRINCE RUPERT, B.C.

The most important addition to the list of cold storage warehouses, completed during the year, is the one erected at Prince Rupert, B.C., by the Canadian Fish and Cold Storage Co. This warehouse with 781,000 cubic feet of refrigerated space, is constructed of reinforced concrete throughout and insulated with a 3-inch tile and 5 inches of cork board. The floors are covered with mastic asphalt. It is expected that a large business will be done through this warehouse in the handling of fresh fish, as soon as the Grand Trunk Pacific railway is opened.

## THE GRAVITY BRINE SYSTEM.

A number of the more recently erected warehouses in Ontario are equipped with the gravity brine system. This type of warehouse is used chiefly for the storing of eggs, dressed poultry, butter and cheese, which are produced in the locality. In places where a supply of natural ice is available at a reasonable cost, the system is giving good satisfaction and especially for the storage of eggs.



APPENDIX VIII.

SOME STATISTICS OF THE EXPORT TRADE IN DAIRY PRODUCE.  
TOTAL EXPORTS OF CHEESE AND BUTTER IN FISCAL YEARS 1880 TO 1913  
INCLUSIVE.

Butter.			Cheese.		
Year.	Quantity.	Value.	Year.	Quantity.	Value.
<i>Years ended June 30</i>	Lbs.	\$	<i>Years ended June 30.</i>	Lbs.	\$
1880.....	18,535,362	3,058,069	1880.....	40,368,678	3,893,366
1890.....	1,951,585	340,131	1890.....	94,260,187	9,372,212
1891.....	3,768,101	602,175	1891.....	106,202,140	9,508,800
1892.....	5,736,696	1,056,058	1892.....	118,270,052	11,652,412
1893.....	7,036,013	1,296,814	1893.....	133,916,365	13,407,470
1894.....	5,534,621	1,095,588	1894.....	154,977,480	15,488,191
1895.....	3,650,258	697,476	1895.....	146,004,650	14,253,002
1896.....	5,889,241	1,052,089	1896.....	164,689,123	13,956,571
1897.....	11,453,351	2,089,173	1897.....	164,220,699	14,676,239
1898.....	11,253,787	2,046,686	1898.....	196,703,323	17,572,763
1899.....	20,139,195	3,700,873	1899.....	189,827,839	16,776,765
1900.....	25,259,737	5,122,156	1900.....	185,984,430	19,856,324
1901.....	16,335,528	3,295,663	1901.....	195,926,397	20,696,951
1902.....	27,855,978	5,660,541	1902.....	200,946,401	19,986,281
1903.....	34,123,944	6,954,618	1903.....	229,099,925	24,712,943
1904.....	24,568,001	4,724,155	1904.....	233,980,716	24,184,566
1905.....	31,754,303	5,930,379	1905.....	215,733,259	20,300,500
1906.....	34,031,525	7,075,539	1906.....	215,834,543	24,433,169
<i>Years ended Mar. 31.</i>			<i>Years ended Mar. 31.</i>		
1907 (9 months).....	18,078,508	4,011,609	1907 (9 months).....	178,141,567	22,006,584
1908.....	4,786,954	1,068,703	1908.....	189,710,463	22,887,237
1909.....	6,326,355	1,521,436	1909.....	164,907,139	20,384,666
1910.....	4,615,380	1,010,274	1910.....	180,859,886	21,607,692
1911.....	3,142,682	744,288	1911.....	181,895,724	20,739,507
1912.....	8,844,402	2,077,916	1912.....	163,450,684	20,888,818
1913.....	828,323	223,578	1913.....	155,216,392	20,697,144

DETAILED EXPORTS OF DAIRY PRODUCTS FOR YEAR ENDED MARCH 31, 1913.

To all Countries.	Quantity.	Value.
		\$
Cheese..... lbs.	155,216,392	20,697,144
Butter..... "	828,323	223,758
Cream..... galls.	820,360	751,123
Condensed milk..... lbs.	335,849	25,554
Casein..... "	349,865	15,342
Fresh milk..... galls.	7,939	1,412
Total value.....		21,714,153



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COMPARATIVE VALUE OF DETAILED EXPORTS FOR YEARS ENDED MARCH 31,  
1909, 1910, 1911, 1912 and 1913.

	1913.	1912.	1911.	1910.	1909.
	\$	\$	\$	\$	\$
Cheese. ....	20,697,144	20,888,818	20,739,507	21,607,692	20,384,666
Butter. ....	223,578	2,077,916	744,288	1,010,272	1,521,436
Condensed milk. ....	25,554	305,678	469,406	541,372	90,520
Fresh milk. ....	1,412	975	4,276		
Cream. ....	751,123	792,687	1,714,528		
Casein. ....	15,342	38,302	37,009		
	21,714,153	24,104,376	23,709,014	23,159,336	21,996,622

EXPORTS TO UNITED STATES.

Values of Dairy Products Exported to the United States during the Years ended  
March 31, 1908, 1909, 1910, 1911, 1912 and 1913.

	1913.	1912.	1911.	1910.	1909.	1908.
	\$	\$	\$	\$	\$	\$
Cheese. ....	41 366	31,653	36,034	23,995	19,428	17,732
Butter. ....	75,192	103,819	91,313	199,854	18,246	38,899
Cream. ....	751,123	792,595	1,714,528	220,446	8,256	2,737
Condensed milk. ....	5,107	3,983	11,474			
Casein. ....	15,342	38,302	37,009			
Fresh milk. ....	1,412	975	3,257			
	889,542	971,327	1,893,615	445,295	45,930	59,368

Down to the beginning of the fiscal year 1911, the exports of fresh milk, cream, condensed milk and casein were included under one head in the Trade and Navigation returns.



STATEMENT OF EXPORTS OF CHEESE BY COUNTRIES IN FISCAL YEARS 1903 TO 1913 INCLUSIVE.  
(Years ended June 30, 1903 to 1906, and years ended March 31, to 1913.)

To	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.
	\$ .	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Great Britain . . . . .	24,620,004	21,099,004	20,174,211	24,300,908	21,900,878	22,763,736	20,268,166	21,481,566	20,577,542	20,733,064	20,497,195
Australia . . . . .	6,913	6,247	5,411	5,350	245	525	223	171	88	58	448
British Africa . . . . .	2,514	7,559	10,612	16,623	18,261	16,362	12,466	16,425	22,601	26,873	28,100
B. W. Indies . . . . .	44,674	34,253	36,176	25,509	13,666	27,533	26,940	24,035	25,844	26,259	24,164
B. E. Indies . . . . .	40	315	62	20							
British Guiana . . . . .	2,165	1,193	2,571	3,860	3,143	6,228	4,452	5,232	4,747	7,872	6,975
Other British Possessions . . . . .	553	216				9	1	1,011	1,575		24
Hong Kong . . . . .	161	1,253	1,079	1,029		851	2,452	733	1,077	1,407	3,335
New Zealand . . . . .	983	1,039	1,642	1,795	1,690	1,362	54	1,267	467	645	385
Newfoundland . . . . .	21,344	21,754	35,171	30,992	37,748	35,792	41,163	36,912	39,855	44,435	63,900
Belgium . . . . .		10	22	287		2,080			1		
Argentina . . . . .	14										
Cuba . . . . .	331	211	102	811		57		17	419	53	52
China . . . . .	1,734	1,899	2,013	2,195	2,206	1,572	568	756	1,040	1,302	1,155
Danish West Indies . . . . .	2,037	1,936	2,046	2,056	1,568	1,985	1,937	2,453	2,148	2,704	2,416
France . . . . .		44	700	7,203		10	81		5,534	38	2,331
Japan . . . . .	1,076	1,609	759	775	1,071	1,444	2,200	1,208	2,700	1,419	2,392
Philippine Islands . . . . .	289	100									
St. Pierre . . . . .	120	356	341	875	318	190	364	311	338	274	390
United States . . . . .	7,779	5,386	14,182	16,082	6,900	17,732	19,428	23,995	36,034	31,653	41,366
Dutch West Indies . . . . .											
Norway and Sweden . . . . .											
Germany . . . . .	170		104	994							
Bermuda . . . . .			364		54	3		102			
Dutch Guiana . . . . .	15	23	12,505	14,033	9,080	9,245	3,174	11,385	1,126	10,194	20,738
Egypt . . . . .	30		18	13	9						
Mexico . . . . .		159	329	1,594	630	168	499	108		56	26
French West Indies . . . . .	7										55
Central America . . . . .			80			347	3				
Holland . . . . .				97	110						
U.S. of Colombia . . . . .				68							23
Other countries . . . . .						6		5		212	724
Totals . . . . .	24,712,943	24,184,566	20,300,500	24,433,169	22,006,584	22,887,237	20,384,666	21,607,692	20,739,507	20,888,818	20,697,144



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STATEMENT OF EXPORTS OF BUTTER BY COUNTRIES IN FISCAL YEARS 1903 TO 1913 INCLUSIVE.

(Years ended June 30, 1903 to 1906; years ended March 31, 1907 to 1913.)

To	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Great Britain.....	6,554,014	4,400,774	5,568,995	6,802,003	3,805,925	823,761	1,273,484	587,493	401,621	1,769,510	173
British West Indies.....	112,968	127,790	80,323	87,085	59,313	85,371	95,370	76,026	70,444	54,365	26,604
British Guiana.....	7,565	6,412	8,929	11,654	8,113	12,861	7,711	9,497	10,682	4,865	1,772
Other British Possessions.....	72					5		514	1,423	86	188
Newfoundland.....	69,017	82,422	82,387	48,283	55,516	34,931	54,552	50,074	57,198	76,691	62,943
China.....	141	1,763	562	761	5,041	1,319					
Cuba.....	202	796	658	285	1,034	720	96	22	985	158	223
Danish West Indies.....	6,077	5,868	4,473	4,560	3,661	4,939	4,418	4,697	1,438	2,155	1,158
French West Indies.....	1,020										
Germany.....	13	25,641									
Hawaii.....	115							9,777			
Hayti.....	38										
Japan.....	1,816	6,027	6,496	9,373	9,062	4,253	3,019	1,002	840	240	
St. Pierre.....	28,655	26,598	21,827	17,668	17,615	18,749	14,740	14,036	18,560	8,216	12,561
United States.....	10,225	6,497	70,580	33,963	3,539	38,899	18,246	199,854	91,313	103,819	75,192
British Africa.....	133,958	16,417	4,914	2,056	265		22,458	1,873	10,460	2,596	
Mexico.....	4,685			1,268	484	265	660	936	59	171	31
Brazil.....	9,084										
Dutch West Indies.....											
U.S. Colombia.....	1,175	2,272	200	1,747	2,145		1,105			69	
Australia.....	6,187										
Bermuda.....			50,482	47,045	33,900	33,177	14,273	43,658	54,665	41,209	33,677
France.....		14	14,440	4,155							
San Domingo.....	1,351										
Holland.....		8,175	13,680								
Venezuela.....	6,240										
Belgium.....		10	116								
Central America.....		686	1,062	3,431	4,932	9,448	7,071	2,500	3,948	3,268	2,890
Corea.....			15					15			
Dutch Guiana.....			186	30	40			48			
Turkey.....			50		21						
Porto Rico.....				170							
Panama.....											
Austria-Hungary.....							4,229	7,320	19,881	10,000	5,420
Alaska.....							1				746
Totals.....	6,954,618	4,724,155	5,930,379	7,075,539	4,011,609	1,068,703	1,521,436	1,010,274	744,288	2,077,916	223,578



4 GEORGE V., A. 1914

CHEESE IMPORTS INTO THE UNITED KINGDOM, FROM BRITISH TRADE RETURNS,  
YEARS ENDED DECEMBER 31.

From	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
Canada .....	1,858,767	1,925,835	1,698,847	1,541,502	1,566,546	1,607,064	1,473,275	1,352,570
United States...	175,276	233,445	114,309	105,555	54,617	38,247	150,321	21,227
Netherlands .....	214,033	229,341	241,551	279,401	285,329	231,832	207,917	268,286
New Zealand ...	78,626	126,216	192,301	264,995	368,531	453,785	397,845	543,917
Other countries..	116,000	123,957	125,234	114,633	115,067	125,427	118,964	122,799
Total ...	2,442,682	2,638,794	2,372,233	2,306,086	2,390,090	2,456,340	2,348,326	2,308,799
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Canada .....	76.1	73.0	71.7	66.8	65.5	65.5	62.7	58.6
United States..	7.2	8.8	4.8	4.6	2.3	1.6	6.4	0.9
Netherlands .....	8.7	8.7	10.2	12.1	12.0	9.4	8.9	11.6
New Zealand....	3.2	4.8	8.1	11.5	15.4	18.5	16.9	23.6
Other countries..	4.8	4.7	5.2	5.0	4.8	5.0	5.1	5.3
Total. ....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

BUTTER IMPORTS INTO THE UNITED KINGDOM FROM BRITISH TRADE RETURNS,  
YEARS ENDED DECEMBER 31.

From	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
Russia .....	461,140	606,549	657,649	639,118	601,712	584,040	638,284	683,650
Sweden. ....	188,209	182,803	226,740	238,929	312,142	345,684	360,357	335,014
Denmark. ....	1,630,363	1,675,761	1,818,811	1,857,103	1,764,027	1,726,091	1,707,178	1,618,048
Germany.....	5,372	10,701	7,297	3,195	2,965	3,481	.....	.....
Netherlands ....	209,897	195,366	168,496	244,356	148,567	154,537	104,655	113,716
France. ....	348,442	319,401	281,306	394,612	413,306	361,249	171,080	246,652
United States...	84,874	157,312	1,063	39,540	693	756	23,052	2,596
Australia. ....	450,293	545,827	598,986	409,106	384,619	639,093	874,399	541,253
New Zealand....	300,418	311,672	313,863	221,395	278,581	362,674	276,446	349,012
Canada.....	292,117	190,968	34,753	47,877	22,522	16,805	61,936	27
Other countries..	176,741	140,898	101,192	115,590	133,699	131,129	85,305	115,191
Total. ....	4,147,866	4,337,258	4,210,156	4,210,821	4,062,833	4,325,539	4,302,692	4,005,159
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Russia .....	11.1	14.1	15.6	15.2	14.8	13.5	14.8	17.1
Sweden.....	4.5	4.2	5.4	5.7	7.7	7.9	8.4	8.4
Denmark .....	39.3	38.6	43.2	44.1	43.4	39.9	39.7	40.4
Germany.....	0.1	0.3	0.2	0.1	0.07	0.09	.....	.....
Netherlands ....	5.1	4.5	4.0	5.8	3.7	3.9	2.4	2.8
France. ....	8.4	7.1	6.7	9.7	10.1	8.4	4.0	6.1
United States...	2.0	3.6	0.03	0.9	0.01	0.01	0.5	0.0
Australia. ....	10.8	12.5	14.2	9.5	9.5	14.7	20.3	13.6
New Zealand....	7.5	7.2	7.5	5.3	6.9	8.3	6.4	8.7
Canada.....	7.0	4.4	0.8	1.1	0.6	0.3	1.4	0.0
Other countries..	4.2	3.5	2.4	2.6	3.3	3.0	2.1	2.9
Total. ....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

N.B.—1912 figures unrevised.



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IMPORTS OF DAIRY PRODUCE, FOR CONSUMPTION IN CANADA, DURING THE  
YEARS ENDED MARCH 31.

	1910.	1911.	1912.	1913.
	Lbs.	Lbs.	Lbs.	Lbs.
Cheese.....	945,896	1,186,279	2,426,217	1,495,758
Butter.....	687,454	1,328,792	3,987,332	7,989,269
Condensed milk.....	264,297	193,672	138,427	261,555

## IMPORTS OF BUTTER BY COUNTRIES, YEARS ENDED MARCH 31.

Country.	Quantities.			
	1910.	1911.	1912.	1913.
	Lbs.	Lbs.	Lbs.	Lbs.
Great Britain.....	45,837	99,502	811,550	767,131
Australia.....	547,149	429,966	104,440	98,112
New Zealand.....	21,840	489,359	2,121,862	6,018,022
Turkey.....	240	167	165	
United States.....	67,568	307,187	946,695	1,100,431
Other countries.....	4,820	2,611	2,620	5,573
Totals.....	687,454	1,328,792	3,987,332	7,989,269



















